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Analyses of Natural Gases, 1978

By B. J. Moore

UNITED STATES DEPARTMENT OF THE INTERIOR

United States. Bureau of Mines.

Information Circular 8810

Analyses of Natural Gases, 1978

By B. J. Moore

UNITED STATES DEPARTMENT OF THE INTERIOR
Cecil D. Andrus, Secretary

BUREAU OF MINES
Lindsay D. Norman, Acting Director

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. administration.

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ANALYSES OF NATURAL GASES, 1978

by

B. J. Moore[1]

INTRODUCTION

This publication contains analyses and related source data for 310 natural gas samples from wells and pipelines in 16 States. All of the samples were obtained and analyzed during calendar year 1978 as a part of Bureau of Mines investigations of the occurrences of helium in natural gases of countries with free market economies. This survey has been conducted in the United States by the Bureau of Mines since 1917. In late 1965, the survey was expanded to include foreign gasfields. The analyses published herein were made by mass spectrometer and a special helium analysis apparatus, which are described in Bureau of Mines Bulletins 486[2/] and 576.[3/]

The results of the investigation of the occurrences of helium are published annually to make the information available as soon as possible to the gas industry and the public in general. Twenty previous publications have presented the results of 11,573 gas analyses made prior to 1978. The first three, Bulletins 486,[4/] 576,[5/] and 617,[6/] contain analyses and related source data on 5,218 gas samples collected from 1917 through 1960. The other 17

1/ Chief, Section of Helium Resources Evaluation, Branch of Helium Resources, Helium Operations, Bureau of Mines, Amarillo, Tex.

2/ Anderson, C. C., and H. H. Hinson. Helium-Bearing Natural Gases of the United States. Analyses and Analytical Methods. BuMines Bull. 486, 1951, 141 pp.

3/ Boone, W. J., Jr. Helium-Bearing Natural Gases of the United States. Analyses and Analytical Methods. Supplement to Bulletin 486. BuMines Bull. 576, 1958, 117 pp.

4/ Work cited in footnote 2.

5/ Work cited in footnote 3.

6/ Munnerlyn, R. D., and R. D. Miller, Helium-Bearing Natural Gases of the United States: Analyses. Second Supplement to Bulletin 486. BuMines Bull. 617, 1963, 93 pp.

publications,7/ which were issued as information circulars, supplement the three bulletins and contain 6,355 analyses of samples collected since 1960. This publication is the 18th publication supplementing the three bulletins.

In 1976, a compilation of the analyses made prior to 1975 was published by the National Technical Information Service of the U.S. Department of Commerce. This compilation, entitled "Analyses of Natural Gases, 1917-74," contains 10,562 analyses of gas samples from oil and gas wells and natural gas pipelines in 37 States and 23 foreign countries. The compilation is available from the National Technical Information Service, Springfield, Va. 22161. Catalog number of the publication is PB 251-202 and the price is $24.

In addition to being included in the publications, all published analyses and related information are available on a magnetic tape file. The tape is also available from the National Technical Information Service, and orders should refer to Bureau of Mines Tape PB 283-264, $102.

This year, for the first time, the specific gravity of each of the gas samples is included. This information will be included in all future publications.

ACKNOWLEDGMENTS

The helium survey program is conducted by soliciting natural gas samples throughout the United States and other countries with free market economies. Without the assistance of the oil and gas industry, State and national agencies, and many individuals engaged in oil and gas exploration and production, the helium survey with its present scope would be impossible.

The analyses listed in the tables were made by the Section of Technical Services, Helium Operations, Bureau of Mines, Amarillo, Tex. The list of analyses was produced through use of a computer by the Section of Automatic Data Processing, Helium Operations, Bureau of Mines, Amarillo, Tex.

7/ Miller, R. D., and G. P. Norrell. Analyses of Natural Gases of the United States, 1961. BuMines IC 8221, 1964, 148 pp.
_____. Analyses of Natural Gases of the United States, 1962. BuMines IC 8239, 1964, 120 pp.
_____. Analyses of Natural Gases of the United States, 1963. BuMines IC 8241, 1965, 102 pp.
Moore, B. J., R. D. Miller, and R. D. Shrewsbury. Analyses of Natural Gases of the United States, 1964. BuMines IC 8302, 1966, 144 pp.
Moore, B. J., and R. D. Shrewsbury. Analyses of Natural Gases of the United States, 1965. BuMines IC 8316, 1966, 181 pp.
_____. Analyses of Natural Gases, 1966. BuMines IC 8356, 1967, 130 pp.
_____. Analyses of Natural Gases, 1967. BuMines IC 8395, 1968, 187 pp.
Cardwell, L. E., and L. F. Benton. Analyses of Natural Gases, 1968. BuMines IC 8443, 1969, 169 pp.
_____. Analyses of Natural Gases, 1969. BuMines IC 8475, 1970, 134 pp.
_____. Analyses of Natural Gases, 1970. BuMines IC 8518, 1971, 130 pp.
_____. Analyses of Natural Gases, 1971. BuMines IC 8554, 1972, 163 pp.
_____. Analyses of Natural Gases, 1972. BuMines IC 8607, 1973, 104 pp.
Moore, B. J. Analyses of Natural Gases, 1973. BuMines IC 8658, 1974, 96 pp.
_____. Analyses of Natural Gases, 1974. BuMines IC 8684, 1975, 122 pp.
_____. Analyses of Natural Gases, 1975. BuMines IC 8717, 1976, 82 pp.
_____. Analyses of Natural Gases, 1976. BuMines IC 8749, 1977, 94 pp.
_____. Analyses of Natural Gases, 1977. BuMines IC 8780, 1978, 95 pp.

FIGURE 1. - Geologic provinces of the United States.

GEOLOGIC PROVINCES OF THE UNITED STATES

The tables include geologic province codes so that each sample source can be located within a specific geologic province as defined by the Committee on Statistics of Drilling of the American Association of Petroleum Geologists.[8/] These provinces, which are given in the following list and shown in figure 1, are delineated by political boundaries for convenience and for accommodation of data-processing equipment. The accompanying list and figure 1 are taken from the article cited in footnote 8. Not all of the provinces shown are gas-producing areas, so many of the codes are not used in this publication. In offshore areas, only one code is used for each State, since State or Federal ownership is not always known. Only one code, 972, is used for all wells in Alaska, both onshore and offshore, because of the lack of information on the location of wells in that State.

Code	Province
100	New England province
110	Adirondack uplift
120	Atlantic Coast basin
130	South Georgia-North Florida sedimentary province
140	South Florida province
150	Piedmont-Blue Ridge province
160	Appalachian basin
200	Warrior basin
210	Mid-Gulf Coast basin
220	Gulf Coast basin
230	Arkla basin
240	Desha Basin
250	Upper Mississippi embayment
260	East Texas basin
300	Cincinnati arch
305	Michigan basin
310	Wisconsin arch
315	Illinois basin
320	Sioux uplift
325	Iowa shelf
330	Lincoln anticline
335	Forest City basin
340	Ozark uplift
345	Arkoma basin
350	South Oklahoma folded belt province
355	Chautauqua platform
360	Anadarko basin
365	Cherokee basin
370	Nemaha anticline

8/ Meyer, R. F. Geologic Provinces Code Map for Computer Use. AAPG Bull., v. 54/7, July 1970, pp. 1301-1305.

Code	Province
375	Sedgwick basin
380	Salina basin
385	Central Kansas uplift
390	Chadron arch
395	Williston basin
400	Ouachita tectonic belt province
405	Kerr basin
410	Llano uplift
415	Strawn basin
420	Fort Worth syncline
425	Bend arch
430	Permian basin
435	Palo Duro basin
440	Amarillo arch
445	Sierra Grande uplift
450	Las Animas arch
455	Las Vegas-Raton basin
460	Estancia basin
465	Orogrande basin
470	Pedregosa basin
475	Basin-and-Range province
500	Sweetgrass arch
505	Montana folded belt province
510	Central Montana uplift
515	Powder River basin
520	Big Horn basin
525	Yellowstone province
530	Wind River basin
535	Green River basin
540	Denver basin
545	North Park basin
550	South Park basin
555	Eagle basin
560	San Luis basin
565	San Juan Mountain province
570	Uinta uplift
575	Uinta basin
580	San Juan basin
585	Paradox basin
590	Black Mesa basin
595	Piceance basin
600	Northern Cascade Range--Okanagan province
605	Eastern Columbia basin
610	Idaho Mountains province
615	Snake River basin
620	Southern Oregon basin

Code	Province
625	Great Basin province
630	Wasatch uplift
635	Plateau sedimentary province
640	Mojave basin
645	Salton basin
650	Sierra Nevada province
700	Bellingham basin
705	Puget Sound province
710	Western Columbia basin
715	Klamath Mountains province
720	Eel River basin
725	Northern Coast Range province
730	Sacramento basin
735	Santa Cruz basin
740	Coastal basins
745	San Joaquin basin
750	Santa Maria basin
755	Ventura basin
760	Los Angeles basin
765	Capistrano basin
800	Heceta Island area
805	Keku Islands area
810	Gulf of Alaska basin
815	Copper River basin
820	Cook Inlet basin
830	Kandid province
835	Kobuk province
840	Koyukuk province
845	Bristol Bay basin
850	Bethel basin
855	Norton basin
860	Selawik basin
863	Yukon Flats basin
865	Lower Tanana basin
867	Middle Tanana basin
870	Upper Tanana basin
873	Galena basin
875	Innoko basin
877	Minchumina basin
880	Holitna basin
885	Arctic Foothills province
890	Arctic Slope basin
900	Maine Atlantic offshore--general
901	Maine Atlantic offshore--State
902	Maine Atlantic offshore--Federal
903	New Hampshire Atlantic offshore--general

Code	Province
904	New Hampshire Atlantic offshore--State
905	New Hampshire Atlantic offshore--Federal
906	Massachusetts Atlantic offshore--general
907	Massachusetts Atlantic offshore--State
908	Massachusetts Atlantic offshore--Federal
909	Rhode Island Atlantic offshore--general
910	Rhode Island Atlantic offshore--State
911	Rhode Island Atlantic offshore--Federal
912	Connecticut Atlantic offshore--general
913	Connecticut Atlantic offshore--State
914	Connecticut Atlantic offshore--Federal
915	New York Atlantic offshore--general
916	New York Atlantic offshore--State
917	New York Atlantic offshore-- Federal
918	New Jersey Atlantic offshore--general
919	New Jersey Atlantic offshore--State
920	New Jersey Atlantic offshore--Federal
921	Delaware Atlantic offshore--general
922	Delaware Atlantic offshore--State
923	Delaware Atlantic offshore--Federal
924	Maryland Atlantic offshore--general
925	Maryland Atlantic offshore--State
926	Maryland Atlantic offshore--Federal
927	Virginia Atlantic offshore--general
928	Virginia Atlantic offshore--State
929	Virginia Atlantic offshore--Federal
930	North Carolina Atlantic offshore--general
931	North Carolina Atlantic offshore--State
932	North Carolina Atlantic offshore--Federal
933	South Carolina Atlantic offshore--general
934	South Carolina Atlantic offshore--State
935	South Carolina Atlantic offshore--Federal
936	Georgia Atlantic offshore--general
937	Georgia Atlantic offshore--State
938	Georgia Atlantic offshore--Federal
939	Florida Atlantic offshore--general
940	Florida Atlantic offshore--State
941	Florida Atlantic offshore-- Federal
942	Florida Gulf of Mexico offshore--general
943	Florida Gulf of Mexico offshore--State
944	Florida Gulf of Mexico offshore--Federal
945	Alabama Gulf of Mexico offshore--general
946	Alabama Gulf of Mexico offshore--State
947	Alabama Gulf of Mexico offshore--Federal
948	Mississippi Gulf of Mexico offshore--general
949	Mississippi Gulf of Mexico offshore--State
950	Mississippi Gulf of Mexico offshore--Federal
951	Louisiana Gulf of Mexico offshore--general

Code	Province
952	Louisiana Gulf of Mexico offshore--State
953	Louisiana Gulf of Mexico offshore--Federa
954	Texas Gulf of Mexico offshore--general
955	Texas Gulf of Mexico offshore--State
956	Texas Gulf of Mexico offshore--Federal
957	California Pacific offshore--general
958	California Pacific offshore--State
959	California Pacific offshore--Federal
960	Oregon Pacific offshore--general
961	Oregon Pacific offshore--State
962	Oregon Pacific offshore--Federal
963	Washington Pacific offshore--general
964	Washington Pacific offshore--State
965	Washington Pacific offshore--Federal
972	Alaska Arctic offshore--general
973	Alaska Arctic offshore--State
974	Alaska Arctic offshore--Federal
975	Alaska Bering Sea offshore--general
976	Alaska Bering Sea offshore--State
977	Alaska Bering Sea offshore--Federal
978	Alaska Pacific offshore--general
979	Alaska Pacific offshore--State
980	Alaska Pacific offshore--Federal
987	Minnesota Lake Superior offshore
988	Wisconsin Lake Superior offshore
989	Michigan Lake Superior offshore
990	Indiana Lake Michigan offshore
991	Illinois Lake Michigan offshore
992	Wisconsin Lake Michigan offshore
993	Michigan Lake Michigan offshore
994	Michigan Lake Huron offshore
995	Michigan Lake Erie offshore
996	Ohio Lake Erie offshore
997	Pennsylvania Lake Erie offshore
998	New York Lake Erie offshore
999	New York Lake Ontario offshore

TABLES

The following tables include the results of analyses and related source data from gas samples, which are divided into two groups as follows:

Table 1. - Samples from gas and oil wells in the United States.

Table 2. - Samples from pipelines in the United States.

The following list indicates the sources of the samples listed in the tables:

Source	Number of samples	Tables
Alabama	1	1
Arkansas	2	1
California	1	1
Colorado	8	1, 2
Kansas	52	1, 2
Louisiana	23	1
Mississippi	2	1
Montana	1	1
Nevada	1	1
New Mexico	12	1
New York	2	1
Oklahoma	48	1, 2
Texas	142	1, 2
Utah	1	1
West Virginia	1	1
Wyoming	13	1

All components of the analyses in the tables are reported to the nearest 0.1 percent, except helium, which is reported to the nearest 0.01 percent. The word "trace" is used to denote quantities of helium of less than 0.005 percent and quantities of other components of less than 0.05 percent.

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 1 SAMPLE 15251	INDEX 2 SAMPLE 15543	INDEX 3 SAMPLE 15516
STATE	ALABAMA	ARKANSAS	ARKANSAS
COUNTY	LAMAR	JOHNSON	POPE
FIELD	BLOOMING GROVE	LUTHERVILLE	KNOXVILLE
WELL NAME	MURPHY-RANDOLPH NO. 1	LEAVILLE NO. 1-25	DORN UNIT NO. 1-C
LOCATION	SEC. 12, T15S, R14W	SEC. 25, T10N, R22W	SEC. 33, T9N, R21W
OWNER	TERRA RESOURCES, INC.	SEECO INC.	SAMSON RESOURCES CO.
COMPLETED	09/09/77	08/11/78	07/31/78
SAMPLED	03/28/78	12/19/78	10/10/78
FORMATION	MISS-CARTER	PENN-ATOKA	-TACKETT
GEOLOGIC PROVINCE CODE	200	345	345
DEPTH, FEET	2812	4380	3178
WELLHEAD PRESSURE,PSIG	1056	1650	655
OPEN FLOW, MCFD	3500	9000	5300
COMPONENT, MOLE PCT			
METHANE	97.1	96.1	96.7
ETHANE	2.1	1.1	1.1
PROPANE	0.1	0.1	0.2
N-BUTANE	0.0	0.0	0.0
ISOBUTANE	0.0	0.0	0.0
N-PENTANE	0.0	0.0	0.0
ISOPENTANE	0.0	0.0	0.0
CYCLOPENTANE	0.0	0.0	0.0
HEXANES PLUS	0.0	0.0	0.0
NITROGEN	0.6	2.1	1.0
OXYGEN	0.0	0.1	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.3	0.5
HELIUM	0.05	0.18	0.23
HEATING VALUE*	1024	996	1005
SPECIFIC GRAVITY	0.569	0.572	0.568

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 4 SAMPLE 15318	INDEX 5 SAMPLE 15331	INDEX 6 SAMPLE 15477
STATE	CALIFORNIA	COLORADO	COLORADO
COUNTY	KERN	CHEYENNE	CHEYENNE
FIELD	CAL CANAL	ARAPAHOE	WILDCAT
WELL NAME	CHEVRON CAL CANAL NO. 1	CHAMPLIN FUNK NO. 1	CHAMPLIN-PELTON B NO. 1
LOCATION	SEC. 31, T28S, R22E	SEC. 23, T14S, R42W	SEC. 3, T14S, R44W
OWNER	OCCIDENTAL EXPL. & PROD. CO.	TEXAS OIL & GAS CORP.	MULL DRILLING CO., INC.
COMPLETED	09/09/77	07/03/77	NOT GIVEN
SAMPLED	07/12/78	07/20/78	11/03/78
FORMATION	MIOC-STEVENS	PENN-MORROW	MISS-ST. LOUIS
GEOLOGIC PROVINCE CODE	745	450	450
DEPTH, FEET	11050	5063	5397
WELLHEAD PRESSURE,PSIG	4600	866	NOT GIVEN
OPEN FLOW, MCFD	2200	8399	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	74.0	26.5	9.9
ETHANE	8.6	2.1	1.3
PROPANE	5.6	1.5	2.1
N-BUTANE	2.4	0.6	1.9
ISOBUTANE	1.4	0.5	1.2
N-PENTANE	0.8	0.2	1.0
ISOPENTANE	1.3	0.3	1.0
CYCLOPENTANE	0.5	0.1	0.2
HEXANES PLUS	0.9	0.2	0.8
NITROGEN	0.2	63.9	66.1
OXYGEN	TRACE	0.1	0.2
ARGON	0.0	0.2	1.0
HYDROGEN	0.1	TRACE	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	4.3	1.3	1.8
HELIUM	TRACE	2.46	11.40
HEATING VALUE*	1332	417	417
SPECIFIC GRAVITY	0.825	0.881	0.943

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 7 SAMPLE 15483	INDEX 8 SAMPLE 15330	INDEX 9 SAMPLE 15329
STATE	COLORADO	COLORADO	COLORADO
COUNTY	MOFFAT	MOFFAT	WELD
FIELD	GREAT DIVIDE	LITTLE BUCK MOUNTAIN	HAMBERT
WELL NAME	BRUDER NO. 1	VILLARD NO. 1	WARREN MCMILLEN NO. 1
LOCATION	SEC. 4, T9N, R93W	SEC. 27, T10N, R90W	SEC. 19, T4N, R65W
OWNER	NORTHWEST EXPLORATION CO.	ANADARKO PRODUCTION CO.	AMOCO PRODUCTION CO.
COMPLETED	09/20/78	02/22/78	05/11/76
SAMPLED	11/06/78	07/25/78	08/02/78
FORMATION	CRET-LEWIS	CRET-LEWIS	CRET-SUSSEX
GEOLOGIC PROVINCE CODE	535	535	540
DEPTH, FEET	7526	4657	4389
WELLHEAD PRESSURE,PSIG	1658	1100	NOT GIVEN
OPEN FLOW, MCFD	1600	2087	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	68.6	84.1	79.7
ETHANE	11.8	4.9	10.1
PROPANE	10.0	3.4	4.9
N-BUTANE	2.7	0.9	1.5
ISOBUTANE	2.7	1.0	1.1
N-PENTANE	0.8	0.3	0.5
ISOPENTANE	1.3	0.4	0.5
CYCLOPENTANE	0.3	0.1	0.1
HEXANES PLUS	0.8	0.3	0.4
NITROGEN	0.4	4.3	0.8
OXYGEN	0.0	0.1	0.0
ARGON	0.0	TRACE	0.0
HYDROGEN	0.1	0.1	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.6	TRACE	0.2
HELIUM	0.01	0.02	0.02
HEATING VALUE*	1490	1141	1270
SPECIFIC GRAVITY	0.868	0.681	0.728

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 10 SAMPLE 15478	INDEX 11 SAMPLE 15314	INDEX 12 SAMPLE 15388
STATE	COLORADO	COLORADO	KANSAS
COUNTY	WELD	WELD	BARBER
FIELD	HAMBERT	KIOWA CREEK	MEANDER
WELL NAME	WILLIAM EWING NO. 1	FRANSEN NO. 1	CLARK D NO. 1
LOCATION	SEC. 11, T4N, R66W	SEC. 31, T2N, R61W	SEC. 32, T31S, R12W
OWNER	NIELSON ENTERPRISES, INC.	ENERGY MINERALS CORP.	TEXAS OIL & GAS CORP.
COMPLETED	09/13/78	06/10/77	08/11/77
SAMPLED	11/01/78	07/11/78	09/27/78
FORMATION	CRET-SUSSEX	CRET-LAKOTA	MISS-
GEOLOGIC PROVINCE CODE	540	540	375
DEPTH, FEET	4572	7112	4210
WELLHEAD PRESSURE,PSIG	1420	1420	1318
OPEN FLOW, MCFD	3900	5100	4694
COMPONENT, MOLE PCT			
METHANE	81.6	76.9	75.0
ETHANE	9.1	7.1	7.1
PROPANE	4.5	4.4	3.5
N-BUTANE	1.3	1.5	0.9
ISOBUTANE	0.9	1.1	0.4
N-PENTANE	0.4	0.5	0.2
ISOPENTANE	0.4	0.7	0.2
CYCLOPENTANE	0.1	0.2	0.1
HEXANES PLUS	0.3	0.9	0.1
NITROGEN	1.1	4.5	12.0
OXYGEN	TRACE	TRACE	0.0
ARGON	0.0	0.0	TRACE
HYDROGEN	0.1	0.1	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.2	2.0	0.1
HELIUM	0.03	0.05	0.32
HEATING VALUE*	1234	1213	1048
SPECIFIC GRAVITY	0.709	0.759	0.705

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 13 SAMPLE 15530	INDEX 14 SAMPLE 15544	INDEX 15 SAMPLE 15266
STATE	KANSAS	KANSAS	KANSAS
COUNTY	BARBER	BARBER	BARBER
FIELD	MEDICINE RIVER	NURSE N	WILDCAT
WELL NAME	WHEELOCK NO. 2	OLSON NO. 1	AYRES NO. 1
LOCATION	SEC. 3, T31S, R12W	SEC. 32, T30S, R12W	SEC. 3, T30S, R14W
OWNER	CHIEF DRILLING CO.	RAYMOND OIL CO., INC.	MAURICE L. BROWN CO.
COMPLETED	02/01/78	06/30/78	07/15/77
SAMPLED	12/04/78	12/23/78	04/20/78
FORMATION	MISS-	PENN-TARKIO	PENN-TORONTO
GEOLOGIC PROVINCE CODE	375	375	375
DEPTH, FEET	4302	2940	3831
WELLHEAD PRESSURE,PSIG	1341	940	930
OPEN FLOW, MCFD	6563	2000	2097
COMPONENT, MOLE PCT			
METHANE	76.0	84.9	77.3
ETHANE	6.9	3.8	4.7
PROPANE	3.9	1.6	2.5
N-BUTANE	1.1	0.5	0.9
ISOBUTANE	0.5	0.2	0.3
N-PENTANE	0.2	0.2	0.3
ISOPENTANE	0.1	0.1	0.3
CYCLOPENTANE	TRACE	0.1	0.1
HEXANES PLUS	0.1	0.2	0.2
NITROGEN	10.7	8.0	12.8
OXYGEN	TRACE	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.1	TRACE	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.1	0.2
HELIUM	0.31	0.26	0.44
HEATING VALUE*	1067	1021	1012
SPECIFIC GRAVITY	0.704	0.650	0.692

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 16 SAMPLE 15386	INDEX 17 SAMPLE 15387	INDEX 18 SAMPLE 15269
STATE	KANSAS	KANSAS	KANSAS
COUNTY	COMANCHE	COMANCHE	EDWARDS
FIELD	YELLOWSTONE	YELLOWSTONE	BRITTON
WELL NAME	MCMORAN NO. 1	MCMORAN NO. 1	BRITTON NO. 1
LOCATION	SEC. 8, T35S, R16W	SEC.8, T35S, R16W	SEC. 8, T26S, R18W
OWNER	TEXAS OIL & GAS CORP.	TEXAS OIL & GAS CORP.	KUPE OIL CO. INC.
COMPLETED	06/15/78	06/15/78	01/--/77
SAMPLED	09/27/78	09/27/78	04/21/78
FORMATION	MISS-	PENN-FORT SCOTT	MISS-CHERT
GEOLOGIC PROVINCE CODE	370	370	360
DEPTH, FEET	5280	5164	4709
WELLHEAD PRESSURE,PSIG	1735	1725	1330
OPEN FLOW, MCFD	700	8000	21000
COMPONENT, MOLE PCT			
METHANE	92.4	89.7	89.4
ETHANE	3.6	4.0	3.2
PROPANE	1.3	2.0	1.1
N-BUTANE	0.4	0.7	0.4
ISOBUTANE	0.2	0.3	0.2
N-PENTANE	0.2	0.2	0.1
ISOPENTANE	0.2	0.3	0.1
CYCLOPENTANE	0.1	0.2	0.1
HEXANES PLUS	0.2	0.3	0.1
NITROGEN	1.0	1.9	4.7
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	0.0	TRACE
HYDROGEN	0.1	0.1	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.2	0.2	0.1
HELIUM	0.07	0.08	0.40
HEATING VALUE*	1086	1111	1029
SPECIFIC GRAVITY	0.614	0.639	0.617

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 19 SAMPLE 15231	INDEX 20 SAMPLE 15232	INDEX 21 SAMPLE 15264
STATE	KANSAS	KANSAS	KANSAS
COUNTY	FINNEY	FINNEY	HARVEY
FIELD	PANOMA	PANOMA	WALL
WELL NAME	U.S.A. "D" NO. 7	JONES-I NO. 1	J. SCHRAG NO. 1
LOCATION	SEC. 18, T26S, R34W	SEC. 29, T26S, R34W	SEC. 24, T22S, R3W
OWNER	HELMERICH & PAYNE, INC.	HELMERICH & PAYNE, INC.	GEAR PETROLEUM CO.
COMPLETED	05/14/77	09/10/77	09/20/77
SAMPLED	03/18/78	03/17/78	04/21/78
FORMATION	PERM-COUNCIL GROVE	PERM-COUNCIL GROVE	MISS-
GEOLOGIC PROVINCE CODE	360	360	375
DEPTH, FEET	2790	2813	3200
WELLHEAD PRESSURE,PSIG	205	194	850
OPEN FLOW, MCFD	495	340	8000
COMPONENT, MOLE PCT			
METHANE	72.1	71.7	83.4
ETHANE	6.0	5.6	6.0
PROPANE	3.4	3.0	3.0
N-BUTANE	1.0	0.9	1.1
ISOBUTANE	0.3	0.2	0.4
N-PENTANE	0.2	0.2	0.3
ISOPENTANE	0.2	0.2	0.2
CYCLOPENTANE	0.1	0.1	0.1
HEXANES PLUS	0.2	0.2	0.2
NITROGEN	16.0	17.3	4.9
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.1	0.1
HELIUM	0.42	0.45	0.33
HEATING VALUE*	1001	973	1116
SPECIFIC GRAVITY	0.718	0.714	0.673

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 22 SAMPLE 15319	INDEX 23 SAMPLE 15307	INDEX 24 SAMPLE 15185
STATE	KANSAS	KANSAS	KANSAS
COUNTY	HARVEY	KINGMAN	KIOWA
FIELD	WALL N	LANDSOOWNE N	MULLENVILLE NW
WELL NAME	SCHRAG "D" NO. 1	JOHNSON "A" NO. 1	BRENSING NO. 1
LOCATION	SEC. 24, T22S, R3W	SEC. 4, T28S, R5W	SEC. 6, T28S, R20W
OWNER	HAROLD J. MILBURN	GEAR PETROLEUM CO.	KRM PETROLEUM CORP.
COMPLETED	12/03/77	05/30/78	02/29/77
SAMPLED	07/17/78	06/22/78	12/29/77
FORMATION	MISS-	PERM-INDIAN CAVE	MISS-
GEOLOGIC PROVINCE CODE	375	375	360
DEPTH, FEET	3183	1761	4959
WELLHEAD PRESSURE,PSIG	826	695	1250
OPEN FLOW, MCFD	5800	3490	6500
COMPONENT, MOLE PCT			
METHANE	82.7	68.7	83.6
ETHANE	6.0	2.0	4.9
PROPANE	3.0	0.7	1.8
N-BUTANE	1.0	0.2	0.6
ISOBUTANE	0.5	0.1	0.3
N-PENTANE	0.3	TRACE	0.2
ISOPENTANE	0.3	TRACE	0.0
CYCLOPENTANE	0.1	0.1	0.1
HEXANES PLUS	0.2	0.1	0.3
NITROGEN	4.8	27.0	7.7
OXYGEN	TRACE	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.4	0.1	TRACE
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.2	0.1	0.2
HELIUM	0.33	0.91	0.40
HEATING VALUE*	1115	769	1039
SPECIFIC GRAVITY	0.673	0.688	0.656

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 25 SAMPLE 15469	INDEX 26 SAMPLE 15308	INDEX 27 SAMPLE 15250
STATE	KANSAS	KANSAS	KANSAS
COUNTY	MEADE	MEADE	MORTON
FIELD	BARRAGREE	MCKINNEY	CIMARRON VALLEY
WELL NAME	ROSS NO. 1	ROSSON	GOODARD "A" NO. 1
LOCATION	SEC. 2, T35S, R28W	SEC. 32, T33S, R27W	SEC. 9, T33S, R40W
OWNER	R. J. PATRICK	MESA PETROLEUM CO.	ANADARKO PRODUCTION CO.
COMPLETED	04/25/78	03/21/78	12/02/77
SAMPLED	10/25/78	06/23/78	04/04/78
FORMATION	PERM-COUNCIL GROVE	MISS-CHESTER	PENN-MORROW
GEOLOGIC PROVINCE CODE	360	360	360
DEPTH, FEET	2933	5864	5476
WELLHEAD PRESSURE,PSIG	745	875	1268
OPEN FLOW, MCFD	3014	2150	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	78.6	85.9	88.0
ETHANE	5.6	4.8	3.6
PROPANE	2.5	2.3	1.8
N-BUTANE	0.7	0.7	0.6
ISOBUTANE	0.3	0.3	0.2
N-PENTANE	0.2	0.2	0.2
ISOPENTANE	0.2	0.3	0.2
CYCLOPENTANE	0.1	0.1	0.1
HEXANES PLUS	0.2	0.1	0.2
NITROGEN	10.9	3.6	4.7
OXYGEN	0.2	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.1	0.1	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.0	1.4	0.2
HELIUM	0.43	0.19	0.20
HEATING VALUE*	1027	1080	1061
SPECIFIC GRAVITY	0.681	0.658	0.637

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 28 SAMPLE 15521	INDEX 29 SAMPLE 15372	INDEX 30 SAMPLE 15371
STATE	KANSAS	KANSAS	KANSAS
COUNTY	MORTON	PAWNEE	PAWNEE
FIELD	TALOGA NE	BENSON	CARPENTER
WELL NAME	E. P. LEWIS "B" NO. 1	WURM A NO. 1	WURM B NO. 1
LOCATION	SEC. 18, T34S, R41W	SEC. 19, T23S, R15W	SEC. 32, T23S, R16W
OWNER	ANADARKO PRODUCTION CO.	ALPINE DRILLING CO.	ALPINE DRILLING CO.
COMPLETED	04/10/78	10/19/77	07/19/77
SAMPLED	11/17/78	09/11/78	09/11/78
FORMATION	PENN-CHEROKEE	-CONGLOMERATE	MISS-
GEOLOGIC PROVINCE CODE	360	385	385
DEPTH, FEET	4390	4036	4183
WELLHEAD PRESSURE,PSIG	909	1000	1000
OPEN FLOW, MCFD	2300	120	275
COMPONENT, MOLE PCT			
METHANE	74.6	63.9	87.7
ETHANE	5.9	4.1	3.8
PROPANE	4.8	1.8	1.5
N-BUTANE	1.3	0.6	0.5
ISOBUTANE	0.4	0.3	0.2
N-PENTANE	0.3	0.2	0.2
ISOPENTANE	0.3	0.2	0.1
CYCLOPENTANE	0.1	TRACE	TRACE
HEXANES PLUS	0.1	0.1	0.1
NITROGEN	11.6	25.3	5.0
OXYGEN	0.0	0.0	0.2
ARGON	TRACE	0.2	TRACE
HYDROGEN	0.1	TRACE	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.3	0.2
HELIUM	0.31	2.89	0.49
HEATING VALUE*	1078	820	1037
SPECIFIC GRAVITY	0.720	0.713	0.629

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 31 SAMPLE 15370	INDEX 32 SAMPLE 15369	INDEX 33 SAMPLE 15545
STATE	KANSAS	KANSAS	KANSAS
COUNTY	PAWNEE	PAWNEE	PRATT
FIELD	HEARN N	ZOOK	BRANT
WELL NAME	IRMA SMITH NO. 1	JOYCE ZOOK NO. 1	BRANT NO. A-1
LOCATION	SEC. 26, T23S, R15W	SEC. 9, T23S, R16W	SEC. 31, T28S, R11W
OWNER	ALPINE DRILLING CO.	ALPINE DRILLING CO.	RAYMOND OIL CO., INC.
COMPLETED	04/28/78	06/08/78	06/22/78
SAMPLED	09/11/78	09/11/78	12/23/78
FORMATION	CAMO-ARBUCKLE	-CONGLOMERATE	PERM-INDIAN CAVE
GEOLOGIC PROVINCE CODE	385	385	385
DEPTH, FEET	4121	4023	2624
WELLHEAD PRESSURE,PSIG	1000	1000	840
OPEN FLOW, MCFD	206	300	2060
COMPONENT, MOLE PCT			
METHANE	72.4	86.6	74.8
ETHANE	4.4	3.4	3.8
PROPANE	2.3	1.3	2.2
N-BUTANE	0.8	0.4	0.6
ISOBUTANE	0.5	0.2	0.3
N-PENTANE	0.3	0.2	0.2
ISOPENTANE	0.3	0.1	0.1
CYCLOPENTANE	0.1	TRACE	0.1
HEXANES PLUS	0.3	0.1	0.1
NITROGEN	15.8	6.4	16.9
OXYGEN	0.6	TRACE	0.4
ARGON	0.1	TRACE	TRACE
HYDROGEN	0.2	0.1	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.2	0.1
HELIUM	1.97	0.84	0.41
HEATING VALUE*	961	1010	935
SPECIFIC GRAVITY	0.702	0.625	0.690

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 34 SAMPLE 15518	INDEX 35 SAMPLE 15249	INDEX 36 SAMPLE 15354
STATE	KANSAS	KANSAS	KANSAS
COUNTY	STAFFORD	STEVENS	STEVENS
FIELD	KIPP	GENTZLER	GENTZLER
WELL NAME	KIPP "A" NO. 2	RATLIFF "B" NO. 1	MILLER "N" NO. 1
LOCATION	SEC. 27, T25S, R14W	SEC. 18, T33S, R37W	SEC. 11, T33S, R38W
OWNER	EARL M. KNIGHTON	ANADARKO PRODUCTION CO.	ANADARKO PRODUCTION CO.
COMPLETED	06/09/77	03/30/77	03/12/78
SAMPLED	11/16/78	04/04/78	08/30/78
FORMATION	PERM-CHASE GROUP	PENN-MORROW	PENN-MORROW
GEOLOGIC PROVINCE CODE	385	360	360
DEPTH, FEET	1970	5991	6006
WELLHEAD PRESSURE,PSIG	NOT GIVEN	1396	1495
OPEN FLOW, MCFD	2057	5540	1041
COMPONENT, MOLE PCT			
METHANE	71.9	86.2	85.1
ETHANE	1.7	4.5	4.2
PROPANE	0.6	2.5	2.3
N-BUTANE	0.2	0.9	0.7
ISOBUTANE	TRACE	0.4	0.4
N-PENTANE	TRACE	0.3	0.3
ISOPENTANE	TRACE	0.3	0.2
CYCLOPENTANE	TRACE	0.1	0.1
HEXANES PLUS	TRACE	0.2	0.2
NITROGEN	24.4	4.2	5.9
OXYGEN	0.0	TRACE	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	TRACE	0.0	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.3	0.3
HELIUM	0.97	0.25	0.23
HEATING VALUE*	781	1102	1070
SPECIFIC GRAVITY	0.669	0.660	0.657

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 37 SAMPLE 15338	INDEX 38 SAMPLE 15279	INDEX 39 SAMPLE 15468
STATE	KANSAS	LOUISIANA	LOUISIANA
COUNTY	STEVENS	BOSSIER	CAMERON
FIELD	WALKEMEYER N	ROCKY MOUNT	CAMERON W BLOCK 10
WELL NAME	LEMERT UNIT NO. 2	ANTRIM ESTATE NO. 2-25	STATE LEASE 6930 NO. 1
LOCATION	SEC. 4, T33S, R36W	SEC. 25, T22N, R12W	OFFSHORE
OWNER	MOBIL OIL CORP.	ARKLA EXPLORATION CO.	WAINOCO OIL & GAS CO.
COMPLETED	12/28/77	12/08/77	08/14/78
SAMPLED	08/08/78	05/10/78	10/26/78
FORMATION	PENN-MORROW	JURA-COTTON VALLEY	MIOC-ABBEVILLE
GEOLOGIC PROVINCE CODE	360	230	220
DEPTH, FEET	6044	9186	12440
WELLHEAD PRESSURE,PSIG	1076	3150	2750
OPEN FLOW, MCFD	3300	1400	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	88.1	79.5	89.3
ETHANE	4.6	10.4	6.2
PROPANE	2.5	4.5	1.8
N-BUTANE	0.8	1.3	0.4
ISOBUTANE	0.4	0.6	0.5
N-PENTANE	0.2	0.4	0.2
ISOPENTANE	0.3	0.4	0.2
CYCLOPENTANE	0.1	0.1	TRACE
HEXANES PLUS	0.2	0.3	0.2
NITROGEN	2.4	0.8	0.5
OXYGEN	0.1	0.0	0.0
ARGON	TRACE	0.0	TRACE
HYDROGEN	0.1	0.0	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.2	1.7	0.8
HELIUM	0.15	0.02	TRACE
HEATING VALUE*	1116	1226	1120
SPECIFIC GRAVITY	0.649	0.724	0.640

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 40 SAMPLE 15278	INDEX 41 SAMPLE 15466	INDEX 42 SAMPLE 15467
STATE	LOUISIANA	LOUISIANA	LOUISIANA
PARISH	CAMERON	CAMERON	CAMERON
FIELD	DEEP LAKE N	OCEAN VIEW	OCEAN VIEW
WELL NAME	MIAMI NO. 4	STREAM TRUST NO. 2	STREAM TRUST NO. 2
LOCATION	SEC. 15, T15S, R3W	SEC. 42, T15S, R13W	SEC. 42, T15S, R13W
OWNER	QUINTANA PRODUCTION CO.	WAINOCO OIL & GAS CO.	WAINOCO OIL & GAS CO.
COMPLETED	10/08/77	06/16/77	06/16/77
SAMPLED	05/09/78	10/26/78	10/26/78
FORMATION	MIOC-	MIOC-ABBEVILLE	MIOC-ABBEVILLE
GEOLOGIC PROVINCE CODE	220	220	220
DEPTH, FEET	12300	11091	11091
WELLHEAD PRESSURE,PSIG	2400	1800	1800
OPEN FLOW, MCFD	3000	3037	3037
COMPONENT, MOLE PCT			
METHANE	93.7	89.7	89.7
ETHANE	2.8	5.6	5.7
PROPANE	0.8	1.8	1.7
N-BUTANE	0.2	0.4	0.4
ISOBUTANE	0.2	0.5	0.5
N-PENTANE	0.1	0.1	0.2
ISOPENTANE	0.1	0.2	0.2
CYCLOPENTANE	TRACE	TRACE	TRACE
HEXANES PLUS	0.1	0.2	0.1
NITROGEN	0.4	0.6	0.5
OXYGEN	0.0	TRACE	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.1	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.5	0.8	0.9
HELIUM	TRACE	0.01	TRACE
HEATING VALUE*	1047	1109	1108
SPECIFIC GRAVITY	0.604	0.634	0.634

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 43 SAMPLE 15209	INDEX 44 SAMPLE 15368	INDEX 45 SAMPLE 15219
STATE	LOUISIANA	LOUISIANA	LOUISIANA
PARISH	CLAIBORNE	DE SOTO	DE SOTO
FIELD	ATHENS	BETHANY LONGSTREET	BRUSHY BAYOU
WELL NAME	JOHN FERRELL ESTATE NO. 1	BURFORD NO. 1	B. E. WILBURN NO. 1
LOCATION	SEC. 22, T20N, R7W	SEC. 18, T13N, R13N	SEC. 34, T11N, R12W
OWNER	ICM EXPLORATION CO.	CRYSTAL OIL CO.	SUN PRODUCTION CO.
COMPLETED	NOT GIVEN	04/28/78	08/27/77
SAMPLED	02/13/78	09/11/78	03/08/78
FORMATION	NOT GIVEN	CRET-PALUXY	CRET-PALUXY
GEOLOGIC PROVINCE CODE	230	230	230
DEPTH, FEET	NOT GIVEN	3248	2969
WELLHEAD PRESSURE,PSIG	NOT GIVEN	1328	1350
OPEN FLOW, MCFD	NOT GIVEN	2528	557
COMPONENT, MOLE PCT			
METHANE	87.9	91.0	93.1
ETHANE	4.6	2.5	1.8
PROPANE	1.8	1.0	1.0
N-BUTANE	0.7	0.3	0.6
ISOBUTANE	0.8	0.3	0.5
N-PENTANE	0.8	0.1	0.4
ISOPENTANE	0.1	0.1	0.2
CYCLOPENTANE	0.2	TRACE	0.1
HEXANES PLUS	1.2	0.1	0.4
NITROGEN	1.4	4.2	1.8
OXYGEN	TRACE	0.0	0.0
ARGON	0.0	TRACE	TRACE
HYDROGEN	TRACE	0.1	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.5	0.2	0.1
HELIUM	0.03	0.03	0.03
HEATING VALUE*	1178	1027	1088
SPECIFIC GRAVITY	0.679	0.610	0.622

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 46 SAMPLE 15303	INDEX 47 SAMPLE 15355	INDEX 48 SAMPLE 15184
STATE	LOUISIANA	LOUISIANA	LOUISIANA
PARISH	DE SOTO	DE SOTO	IBERIA
FIELD	GRAND CANE	KINGSTON	BAYOU POSTILLION
WELL NAME	A. F. WILLIAMS NO. 1	STATE LEASE 6760 NO. 1	WILLIAMS U NO 1
LOCATION	SEC. 13, T13N, R15W	SEC.8, T14N, R13W	SEC. 28, T12S, R11E
OWNER	MAY PETROLEUM, INC.	TENNECO OIL CO.	PHILLIPS PETROLEUM CO.
COMPLETED	NOT GIVEN	01/06/78	09/02/76
SAMPLED	06/10/78	08/30/78	01/07/78
FORMATION	CRET-HOSSTON	JURA-COTTON VALLEY	MIOC-DISCORBIS 10
GEOLOGIC PROVINCE CODE	230	230	220
DEPTH, FEET	7173	9515	11882
WELLHEAD PRESSURE,PSIG	1500	3750	3750
OPEN FLOW, MCFD	1220	1575	14500
COMPONENT, MOLE PCT			
METHANE	94.2	88.9	94.5
ETHANE	2.1	5.5	3.2
PROPANE	0.5	1.6	0.7
N-BUTANE	0.2	0.4	0.2
ISOBUTANE	0.1	0.3	0.1
N-PENTANE	0.1	0.2	0.1
ISOPENTANE	0.1	0.2	0.1
CYCLOPENTANE	TRACE	TRACE	TRACE
HEXANES PLUS	0.1	0.2	0.1
NITROGEN	1.2	0.2	0.3
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.1	0.1	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.2	2.2	0.6
HELIUM	0.02	0.01	TRACE
HEATING VALUE*	1029	1092	1057
SPECIFIC GRAVITY	0.596	0.642	0.595

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 49 SAMPLE 15208	INDEX 50 SAMPLE 15475	INDEX 51 SAMPLE 15223
STATE	LOUISIANA	LOUISIANA	LOUISIANA
PARISH	LAFOURCHE	NATCHITOCHES	OUACHITA
FIELD	LAKE BOEUF SW	DEMERY CREEK	MILLHAVEN
WELL NAME	LAUREL VALLEY PLAN NO. 1	MARTIN LBR. CO. NO. 1	FATHEREE NO. 1
LOCATION	SEC. 51, T15S, R17E	SEC. 3, T12N, R7W	SEC. 14, T17N, R4E
OWNER	R. L. BURNS OIL & GAS CORP.	BODCAW CO.	JUSTISS-MEARS OIL CO., INC.
COMPLETED	NOT GIVEN	02/11/78	10/15/77
SAMPLED	02/13/78	10/31/78	03/12/78
FORMATION	NOT GIVEN	CRET-PALUXY	CRET-HOSSTON
GEOLOGIC PROVINCE CODE	220	230	230
DEPTH, FEET	NOT GIVEN	3817	6633
WELLHEAD PRESSURE,PSIG	4200	1615	2675
OPEN FLOW, MCFD	NOT GIVEN	414	825
COMPONENT, MOLE PCT			
METHANE	86.7	90.8	93.2
ETHANE	5.6	1.3	0.9
PROPANE	3.2	0.6	0.2
N-BUTANE	0.9	0.3	0.1
ISOBUTANE	1.1	0.2	TRACE
N-PENTANE	0.3	0.1	0.1
ISOPENTANE	0.4	0.1	0.0
CYCLOPENTANE	0.1	TRACE	TRACE
HEXANES PLUS	0.4	0.1	0.1
NITROGEN	0.6	6.3	4.2
OXYGEN	0.1	0.0	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.1	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.6	0.1	0.9
HELIUM	TRACE	0.07	0.08
HEATING VALUE*	1183	990	978
SPECIFIC GRAVITY	0.678	0.607	0.591

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 52 SAMPLE 15474	INDEX 53 SAMPLE 15293	INDEX 54 SAMPLE 15247
STATE	LOUISIANA	LOUISIANA	LOUISIANA
PARISH	OUACHITA	SABINE	TERREBONNE
FIELD	MILLHAVEN	WILDCAT	MOSQUITO BAY
WELL NAME	B. RYHMES NO. 1	BOISE SOUTHERN B-5 NO. 1	JOHN M. SMYTH ETAL. NO. 1
LOCATION	SEC. 22, T17N, R4E	SEC. 32, T9N, R12W	SEC. 35, T20S, R12E
OWNER	JUSTISS-MEARS OIL CO., INC.	SUN PRODUCTION CO.	LADD PETROLEUM CORP.
COMPLETED	10/17/78	12/29/77	02/19/78
SAMPLED	10/17/78	05/25/78	03/22/78
FORMATION	CRET-HOSSTON	CRET-MOORINGSPORT	NOT GIVEN
GEOLOGIC PROVINCE CODE	230	230	220
DEPTH, FEET	5517	4703	12116
WELLHEAD PRESSURE,PSIG	2325	2490	4200
OPEN FLOW, MCFD	750	878	2620
COMPONENT, MOLE PCT			
METHANE	93.2	93.4	90.0
ETHANE	0.9	0.5	3.8
PROPANE	0.2	0.2	2.0
N-BUTANE	0.1	0.1	0.7
ISOBUTANE	0.1	TRACE	1.5
N-PENTANE	TRACE	TRACE	0.2
ISOPENTANE	TRACE	TRACE	0.3
CYCLOPENTANE	TRACE	0.1	0.1
HEXANES PLUS	0.1	0.1	0.3
NITROGEN	3.3	5.1	0.7
OXYGEN	0.1	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.1	0.1	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.8	0.4	0.6
HELIUM	0.08	0.06	TRACE
HEATING VALUE*	978	973	1146
SPECIFIC GRAVITY	0.597	0.589	0.655

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 55 SAMPLE 15276	INDEX 56 SAMPLE 15277	INDEX 57 SAMPLE 15228
STATE	LOUISIANA	LOUISIANA	LOUISIANA
PARISH	TERREBONNE	TERREBONNE	VERMILION
FIELD	MOSQUITO BAY	MOSQUITO BAY	GROSSE ISLE
WELL NAME	JOHN M. SMYTH ETAL NO. 1	JOHN M. SMYTH ETAL NO. 1	MOLEUS RICHARD NO. 1
LOCATION	SEC. 35, T20S, R12E	SEC. 35, T20S, R12E	SEC. 15, T12S, R4E
OWNER	LADD PETROLEUM CORP.	LADD PETROLEUM CORP.	TEXACO INC.
COMPLETED	09/19/78	02/19/78	07/19/77
SAMPLED	05/--/78	05/--/78	03/13/78
FORMATION	NOT GIVEN	NOT GIVEN	-RICHARD SAND
GEOLOGIC PROVINCE CODE	220	220	220
DEPTH, FEET	12116	12116	14496
WELLHEAD PRESSURE,PSIG	4200	4200	750
OPEN FLOW, MCFD	2620	2620	677
COMPONENT, MOLE PCT			
METHANE	92.3	92.2	77.1
ETHANE	3.3	3.3	7.6
PROPANE	1.4	1.4	5.8
N-BUTANE	0.4	0.4	2.1
ISOBUTANE	0.7	0.7	4.3
N-PENTANE	0.2	0.2	0.7
ISOPENTANE	0.2	0.2	0.8
CYCLOPENTANE	TRACE	0.1	0.1
HEXANES PLUS	0.2	0.2	0.6
NITROGEN	0.7	0.7	0.2
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	TRACE	0.0
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.8	0.8	0.8
HELIUM	TRACE	TRACE	TRACE
HEATING VALUE*	1095	1098	1382
SPECIFIC GRAVITY	0.626	0.628	0.802

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 58 SAMPLE 15310	INDEX 59 SAMPLE 15311	INDEX 60 SAMPLE 15224
STATE	LOUISIANA	LOUISIANA	LOUISIANA
PARISH	WINN	WINN	WINN
FIELD	CALVIN	CALVIN	HATTAWAY BRANCH
WELL NAME	USA 3-31 NO. 1	F. B. TREAT NO. 1	PARDEE NO. 1
LOCATION	SEC. 31, T12N, R4W	SEC. 5, T12N, R4W	SEC. 22, T12N, R1E
OWNER	GETTY OIL CO.	GETTY OIL CO.	JUSTISS-MEARS OIL CO., INC.
COMPLETED	02/06/78	01/05/78	11/02/77
SAMPLED	07/01/78	07/01/78	03/12/78
FORMATION	-TERRYVILLE	-TROY LIME	EOCE-WILCOX
GEOLOGIC PROVINCE CODE	230	230	230
DEPTH, FEET	13000	15520	2781
WELLHEAD PRESSURE,PSIG	7200	10650	1100
OPEN FLOW, MCFD	750	650	347
COMPONENT, MOLE PCT			
METHANE	91.6	91.0	97.6
ETHANE	0.2	0.1	0.1
PROPANE	0.1	TRACE	0.0
N-BUTANE	0.0	0.0	TRACE
ISOBUTANE	0.0	0.0	0.0
N-PENTANE	0.0	0.0	0.1
ISOPENTANE	0.0	0.0	TRACE
CYCLOPENTANE	0.0	0.0	TRACE
HEXANES PLUS	0.0	0.0	TRACE
NITROGEN	1.0	0.3	1.8
OXYGEN	0.0	0.0	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	TRACE	TRACE	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	7.1	8.5	0.2
HELIUM	0.02	0.01	0.02
HEATING VALUE*	934	924	995
SPECIFIC GRAVITY	0.630	0.638	0.565

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 61 SAMPLE 15536	INDEX 62 SAMPLE 15182	INDEX 63 SAMPLE 15341
STATE	MISSISSIPPI	MISSISSIPPI	MONTANA
COUNTY	MONROE	SIMPSON	PHILLIPS
FIELD	BUTTAHATCHIE RIVER	OAK CREEK	NOT GIVEN
WELL NAME	HARMON NO. 16	WILLIAMSON NO. 1	F. ANDERSON NO. 1
LOCATION	SEC. 24, T15S, R18W	SEC. 15, T10N, R19W	SEC. 1, T36N, R31E
OWNER	PRUET & HUGHES OPER. CO.	R. L. BURNS OIL & GAS CORP.	JOSEPH J.C. PAINE & ASSOC.
COMPLETED	10/25/78	NOT GIVEN	08/18/77
SAMPLED	12/08/78	01/01/78	08/06/78
FORMATION	MISS-CARTER	CRET-TUSCALOOSA	CRET-COLORADO
GEOLOGIC PROVINCE CODE	200	210	395
DEPTH, FEET	4577	13777	1355
WELLHEAD PRESSURE,PSIG	1825	3700	575
OPEN FLOW, MCFD	2900	4758	2253
COMPONENT, MOLE PCT			
METHANE	94.5	81.6	91.6
ETHANE	3.0	0.3	0.3
PROPANE	0.3	0.1	0.1
N-BUTANE	0.1	0.1	TRACE
ISOBUTANE	0.1	0.1	TRACE
N-PENTANE	TRACE	0.2	TRACE
ISOPENTANE	0.1	0.0	TRACE
CYCLOPENTANE	0.1	0.1	TRACE
HEXANES PLUS	0.1	0.4	TRACE
NITROGEN	0.8	5.5	7.6
OXYGEN	TRACE	0.1	0.0
ARGON	TRACE	0.1	TRACE
HYDROGEN	TRACE	TRACE	0.2
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.7	11.3	TRACE
HELIUM	0.06	0.03	0.09
HEATING VALUE*	1039	874	937
SPECIFIC GRAVITY	0.591	0.709	0.586

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 64 SAMPLE 15375	INDEX 65 SAMPLE 15365	INDEX 66 SAMPLE 15533
STATE	NEVADA	NEW MEXICO	NEW MEXICO
COUNTY	WASHOE	CHAVES	CHAVES
FIELD	NOT GIVEN	NOT GIVEN	WILDCAT
WELL NAME	SPRING	BEALL FEDERAL NO. 1	O'BRIEN NO. 1
LOCATION	SEC. 16, T23N, R23E	SEC. 17, T11S, R30E	SEC. 11, T9S, R29E
OWNER	PYRAMID LAKE INDIAN RES.	DEPCO, INC.	TEXAS OIL & GAS CORP.
COMPLETED	NOT GIVEN	06/03/77	06/02/77
SAMPLED	09/07/78	08/28/78	12/01/78
FORMATION	NOT GIVEN	PENN-ATOKA	PENN-STRAWN
GEOLOGIC PROVINCE CODE	620	430	430
DEPTH, FEET	NOT GIVEN	9096	8708
WELLHEAD PRESSURE,PSIG	NOT GIVEN	1780	2035
OPEN FLOW, MCFD	NOT GIVEN	4741	4256
COMPONENT, MOLE PCT			
METHANE	84.0	79.9	83.9
ETHANE	TRACE	5.5	5.3
PROPANE	TRACE	2.3	1.9
N-BUTANE	0.0	0.7	0.4
ISOBUTANE	0.0	0.5	0.4
N-PENTANE	0.0	0.2	0.1
ISOPENTANE	0.0	0.4	0.3
CYCLOPENTANE	0.0	0.1	0.2
HEXANES PLUS	0.0	0.2	0.3
NITROGEN	5.8	7.9	5.6
OXYGEN	TRACE	1.6	1.0
ARGON	0.1	0.1	TRACE
HYDROGEN	TRACE	0.0	0.3
HYDROGEN SULFIDE**	0.3	0.0	0.0
CARBON DIOXIDE	9.7	0.5	0.1
HELIUM	TRACE	0.07	0.07
HEATING VALUE*	853	1048	1062
SPECIFIC GRAVITY	0.675	0.688	0.658

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 67 SAMPLE 15254	INDEX 68 SAMPLE 15255	INDEX 69 SAMPLE 15334
STATE	NEW MEXICO	NEW MEXICO	NEW MEXICO
COUNTY	EDDY	EDDY	EDDY
FIELD	DAGGER DRAW	EAGLE CREEK	EMPIRE S
WELL NAME	C.C. TANK UNIT NO. 1	CASKEY "EV" NO. 1	TRAVIS DEEP UNIT NO. 1
LOCATION	SEC. 28, T19S, R24E	SEC. 30, T17S, R26E	SEC. 18, T18S, R29E
OWNER	YATES PETROLEUM CORP.	YATES PETROLEUM CORP.	HEYCO
COMPLETED	06/18/76	01/14/76	03/22/77
SAMPLED	04/06/78	04/06/78	08/03/78
FORMATION	PENN-STRAWN	PENN-ATOKA	PENN-MORROW
GEOLOGIC PROVINCE CODE	430	430	430
DEPTH, FEET	8107	8166	10844
WELLHEAD PRESSURE,PSIG	706	1340	1107
OPEN FLOW, MCFD	1464	4400	1246
COMPONENT, MOLE PCT			
METHANE	83.6	89.9	87.5
ETHANE	8.7	5.4	6.3
PROPANE	3.6	1.8	2.9
N-BUTANE	1.0	0.6	0.7
ISOBUTANE	0.5	0.3	0.4
N-PENTANE	0.2	0.1	0.2
ISOPENTANE	0.4	0.3	0.3
CYCLOPENTANE	0.1	0.1	0.1
HEXANES PLUS	0.2	0.2	0.2
NITROGEN	1.4	1.2	0.9
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.3	0.1	0.3
HELIUM	0.09	0.06	0.02
HEATING VALUE*	1186	1116	1147
SPECIFIC GRAVITY	0.683	0.633	0.653

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 70 SAMPLE 15256	INDEX 71 SAMPLE 15364	INDEX 72 SAMPLE 15366
STATE	NEW MEXICO	NEW MEXICO	NEW MEXICO
COUNTY	EDDY	EDDY	EDDY
FIELD	INDIAN BASIN W	SHUGART N	SHUGART N
WELL NAME	HILLARD "BF" NO. 1	LITTLEFIELD EM FED. NO. 1	LITTLEFIELD EM FED NO 1
LOCATION	SEC. 14, T21S, R22E	SEC. 20, T18S, R31E	SEC. 20, T18S, R31E
OWNER	YATES PETROLEUM CORP.	GULF OIL EXPL. & PROD. CO.	GULF OIL EXPL. & PROD. CO.
COMPLETED	11/19/76	04/04/77	03/28/77
SAMPLED	04/06/78	09/06/78	09/06/78
FORMATION	PENN-MORROW	PENN-ATOKA	PENN-MORROW
GEOLOGIC PROVINCE CODE	430	430	430
DEPTH, FEET	8790	11102	11567
WELLHEAD PRESSURE,PSIG	2495	2630	2329
OPEN FLOW, MCFD	7812	3310	14900
COMPONENT, MOLE PCT			
METHANE	92.1	81.7	86.2
ETHANE	4.2	9.1	7.6
PROPANE	1.5	4.1	3.0
N-BUTANE	0.4	1.0	0.7
ISOBUTANE	0.2	0.5	0.4
N-PENTANE	0.1	0.2	0.2
ISOPENTANE	0.2	0.3	0.3
CYCLOPENTANE	0.1	0.1	0.1
HEXANES PLUS	0.2	0.2	0.2
NITROGEN	0.4	2.5	0.7
OXYGEN	0.0	TRACE	0.1
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.1	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.5	0.2	0.4
HELIUM	0.03	0.04	0.03
HEATING VALUE*	1094	1183	1160
SPECIFIC GRAVITY	0.618	0.691	0.662

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 73 SAMPLE 15282	INDEX 74 SAMPLE 15335	INDEX 75 SAMPLE 15261
STATE	NEW MEXICO	NEW MEXICO	NEW MEXICO
COUNTY	EDDY	LEA	LEA
FIELD	WILDCAT	REEVES N	VACUUM N
WELL NAME	PENN-FEDERAL NO. 1	HANLOD-STATE NO. 1	STATE SECTION 7 NO. 1
LOCATION	SEC. 31, T20S, R30E	SEC. 2, T18S, R35E	SEC. 7, T17S, R35E
OWNER	PENNZOIL CO.	HEYCO	MARATHON OIL CO.
COMPLETED	06/02/76	09/16/77	NOT GIVEN
SAMPLED	11/18/77	08/03/78	04/17/78
FORMATION	PENN-ATOKA	PERM-QUEEN	PENN-ATOKA
GEOLOGIC PROVINCE CODE	430	430	430
DEPTH, FEET	11738	4212	12000
WELLHEAD PRESSURE,PSIG	4357	1303	3577
OPEN FLOW, MCFD	2046	2415	13738
COMPONENT, MOLE PCT			
METHANE	91.8	34.2	88.9
ETHANE	4.4	4.1	6.0
PROPANE	1.3	2.0	1.9
N-BUTANE	0.3	0.7	0.4
ISOBUTANE	0.2	0.3	0.2
N-PENTANE	0.1	0.2	0.1
ISOPENTANE	0.1	0.2	0.3
CYCLOPENTANE	TRACE	0.1	0.1
HEXANES PLUS	0.1	0.2	0.2
NITROGEN	1.4	57.9	1.4
OXYGEN	0.0	0.0	0.1
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	TRACE	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.2	TRACE	0.3
HELIUM	0.02	0.18	0.03
HEATING VALUE*	1073	537	1109
SPECIFIC GRAVITY	0.610	0.863	0.635

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 76 SAMPLE 15321	INDEX 77 SAMPLE 15207	INDEX 78 SAMPLE 15523
STATE	NEW MEXICO	NEW YORK	NEW YORK
COUNTY	RIO ARRIBA	CATTARAUGUS	CHAUTAUQUA
FIELD	BLANCO	BRADFORD	LAKE SHORE
WELL NAME	HOYT NO. 2-A	W-15	SHALLOW GAS SEEP
LOCATION	SEC.5, T26N, R4W	NOT GIVEN	CASSADAGA LAKE
OWNER	CONSOLIDATED OIL & GAS INC.	QUAKER STATE REFINING CORP.	MARVIN LEWIS
COMPLETED	12/27/77	08/10/77	NOT GIVEN
SAMPLED	07/20/78	02/02/78	11/21/78
FORMATION	CRET-MESAVERDE	DEVO-BRADFORD	DEVO-
GEOLOGIC PROVINCE CODE	580	160	160
DEPTH, FEET	6126	NOT GIVEN	NOT GIVEN
WELLHEAD PRESSURE,PSIG	1070	NOT GIVEN	NOT GIVEN
OPEN FLOW, MCFD	3129	NOT GIVEN	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	82.9	44.0	60.6
ETHANE	9.6	25.4	1.4
PROPANE	3.8	17.6	0.2
N-BUTANE	0.9	5.8	0.1
ISOBUTANE	0.7	2.9	0.0
N-PENTANE	0.2	1.3	TRACE
ISOPENTANE	0.3	1.6	TRACE
CYCLOPENTANE	TRACE	0.2	TRACE
HEXANES PLUS	0.2	0.8	0.1
NITROGEN	0.5	TRACE	35.2
OXYGEN	0.0	TRACE	1.7
ARGON	TRACE	0.0	0.4
HYDROGEN	0.5	0.3	TRACE
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.4	TRACE	0.1
HELIUM	0.02	0.02	0.06
HEATING VALUE*	1197	1824	653
SPECIFIC GRAVITY	0.682	1.066	0.725

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 79 SAMPLE 15301	INDEX 80 SAMPLE 15227	INDEX 81 SAMPLE 15326
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	BECKHAM	BECKHAM	BLAINE
FIELD	CARPENTER W	MAYFIELD SW	GREEN NW
WELL NAME	THURMOND NO. 1	WALLACE LEASE NO. 1	BRADFORD NO. 1
LOCATION	SEC. 21, T12N, R22W	SEC. 18, T10N, R26W	SEC. 18, T15N, R11W
OWNER	NATOMAS NORTH AMERICA, INC.	CONTINENTAL OIL CO.	MUSTANG PRODUCTION CO.
COMPLETED	12/08/77	10/18/77	05/19/78
SAMPLED	06/07/78	03/14/78	07/27/78
FORMATION	PENN-MORROW	DEVO-HUNTON	PENN-ATOKA & MORROW
GEOLOGIC PROVINCE CODE	360	360	360
DEPTH, FEET	16060	18567	10234
WELLHEAD PRESSURE,PSIG	11337	6050	5000
OPEN FLOW, MCFD	13382	NOT GIVEN	3500
COMPONENT, MOLE PCT			
METHANE	97.0	95.6	82.8
ETHANE	0.4	1.2	7.7
PROPANE	0.1	0.2	4.8
N-BUTANE	0.0	0.1	1.1
ISOBUTANE	0.0	0.0	0.7
N-PENTANE	0.0	0.1	0.3
ISOPENTANE	0.0	TRACE	0.4
CYCLOPENTANE	0.0	TRACE	0.1
HEXANES PLUS	0.0	0.1	0.3
NITROGEN	0.5	1.1	0.5
OXYGEN	0.1	TRACE	0.0
ARGON	TRACE	TRACE	0.0
HYDROGEN	0.1	0.0	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.8	1.5	1.1
HELIUM	0.02	0.02	0.02
HEATING VALUE*	993	1008	1211
SPECIFIC GRAVITY	0.577	0.587	0.702

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 82 SAMPLE 15327	INDEX 83 SAMPLE 15360	INDEX 84 SAMPLE 15333
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	BLAINE	CADDO	CANADIAN
FIELD	SQUAW CREEK W	ONET S	EL RENO SW
WELL NAME	BARRINGER NO. 1	OPITZ NO. 1	BOLLINGER NO. 1
LOCATION	SEC. 12, T14N, R13W	SEC. 13, T8N, R12W	SEC. 16, T11N, R8W
OWNER	MUSTANG PRODUCTION CO.	J. M. HUBER CORP.	SARKEYS, INC.
COMPLETED	NOT GIVEN	12/22/77	12/30/77
SAMPLED	07/27/78	08/--/78	08/02/78
FORMATION	PENN-MORROW	PENN-MELTON	DEVO-HUNTON
GEOLOGIC PROVINCE CODE	360	360	360
DEPTH, FEET	11137	10213	11798
WELLHEAD PRESSURE,PSIG	7000	4600	3050
OPEN FLOW, MCFD	6000	3682	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	93.8	85.3	78.7
ETHANE	3.3	7.8	11.5
PROPANE	0.9	3.7	5.1
N-BUTANE	0.2	0.8	1.2
ISOBUTANE	0.1	0.5	0.9
N-PENTANE	0.1	0.2	0.4
ISOPENTANE	0.1	0.3	0.3
CYCLOPENTANE	0.1	TRACE	0.1
HEXANES PLUS	0.2	0.2	0.4
NITROGEN	0.4	0.6	0.9
OXYGEN	0.0	TRACE	TRACE
ARGON	TRACE	TRACE	0.0
HYDROGEN	0.1	0.1	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.8	0.4	0.4
HELIUM	0.02	0.04	0.02
HEATING VALUE*	1066	1176	1261
SPECIFIC GRAVITY	0.604	0.670	0.727

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 85 SAMPLE 15459	INDEX 86 SAMPLE 15273	INDEX 87 SAMPLE 15296
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	CANADIAN	CANADIAN	CANADIAN
FIELD	RICHLAND NW	UNION CITY	UNION CITY
WELL NAME	WILKERSON NO. 3	WHITE FARMS "A" NO. 1	VON TONGLEN NO. 1
LOCATION	SEC. 34, T13N, R6W	SEC. 4, T10N, R7W	SEC. 12, T11N, R8W
OWNER	UNIVERSAL RESOURCES CORP.	PHILLIPS PETROLEUM CO.	L. G. WILLIAMS OIL CO.
COMPLETED	07/27/78	01/29/78	08/30/77
SAMPLED	10/26/78	05/04/78	06/01/78
FORMATION	MISS-DEVO&HUNTON	PENN-OSBORN	DEVO-HUNTON
GEOLOGIC PROVINCE CODE	360	360	360
DEPTH, FEET	8424	9880	11010
WELLHEAD PRESSURE,PSIG	1200	3515	2000
OPEN FLOW, MCFD	342	NOT GIVEN	5600
COMPONENT, MOLE PCT			
METHANE	76.5	86.6	80.6
ETHANE	12.0	7.4	10.5
PROPANE	6.1	2.8	4.5
N-BUTANE	1.9	0.7	1.4
ISOBUTANE	0.7	0.3	0.6
N-PENTANE	0.5	0.2	0.4
ISOPENTANE	0.5	0.2	0.4
CYCLOPENTANE	0.2	0.1	0.1
HEXANES PLUS	0.3	0.2	0.3
NITROGEN	1.0	0.8	0.5
OXYGEN	TRACE	0.1	0.0
ARGON	0.0	TRACE	0.0
HYDROGEN	0.1	0.0	TRACE
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.2	0.5	0.5
HELIUM	0.03	0.03	0.03
HEATING VALUE*	1302	1147	1242
SPECIFIC GRAVITY	0.750	0.657	0.712

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 88 SAMPLE 15297	INDEX 89 SAMPLE 15285	INDEX 90 SAMPLE 15363
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	CANADIAN	COAL	CREEK
FIELD	UNION CITY	ASHLAND	BRISTOW S
WELL NAME	RUND NO. 1	SIDMORE NO. 1-35	COLEMAN NO. 1
LOCATION	SEC. 15, T11N, R8W	SEC. 35, T3N, R11E	SEC. 17, T15N, R9E
OWNER	L. G. WILLIAMS OIL CO.	ARKLA EXPLORATION CO.	KRUMME OIL CO.
COMPLETED	08/23/77	05/25/77	01/03/78
SAMPLED	06/01/78	05/26/77	08/15/78
FORMATION	DEVO-HUNTON	PENN-CROMWELL & WAPANUCKA	PENN-DUTCHER
GEOLOGIC PROVINCE CODE	360	345	355
DEPTH, FEET	11799	6877	3081
WELLHEAD PRESSURE,PSIG	3850	2125	580
OPEN FLOW, MCFD	2500	4800	350
COMPONENT, MOLE PCT			
METHANE	78.4	95.5	81.0
ETHANE	12.9	1.7	7.8
PROPANE	4.6	0.2	4.5
N-BUTANE	1.3	0.1	1.3
ISOBUTANE	0.5	0.0	0.4
N-PENTANE	0.4	TRACE	0.3
ISOPENTANE	0.3	0.1	0.2
CYCLOPENTANE	0.1	TRACE	TRACE
HEXANES PLUS	0.3	0.1	0.1
NITROGEN	0.6	0.6	4.1
OXYGEN	0.0	0.0	0.0
ARGON	0.0	TRACE	TRACE
HYDROGEN	TRACE	TRACE	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.4	1.6	0.1
HELIUM	0.03	0.05	0.06
HEATING VALUE*	1254	1016	1161
SPECIFIC GRAVITY	0.720	0.588	0.693

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 91 SAMPLE 15458	INDEX 92 SAMPLE 15218	INDEX 93 SAMPLE 15299
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	CUSTER	DEWEY	GARVIN
FIELD	FAY S	LEEDEY N	EOLA
WELL NAME	SOBER UNIT A NO. 1	MOORE NO. 1-34	ELLA COOK NO. B-4
LOCATION	SEC. 2, T15N, R14W	SEC. 34, T17N, R20W	SEC. 12, T1N, R3W
OWNER	AMOCO PRODUCTION CO.	DYCO PETROLEUM CORP.	TEXAS PACIFIC OIL CO., INC.
COMPLETED	08/16/78	NOT GIVEN	03/--/75
SAMPLED	10/26/78	03/02/78	06/--/78
FORMATION	PENN-MORROW	PENN-OSWEGO	MISS-SYCAMORE
GEOLOGIC PROVINCE CODE	360	360	350
DEPTH, FEET	10478	10230	5700
WELLHEAD PRESSURE,PSIG	5613	5000	1800
OPEN FLOW, MCFD	2405	NOT GIVEN	2000
COMPONENT, MOLE PCT			
METHANE	87.2	80.2	83.2
ETHANE	6.3	10.0	8.8
PROPANE	2.9	4.3	4.0
N-BUTANE	0.7	1.0	1.2
ISOBUTANE	0.5	0.5	0.4
N-PENTANE	0.2	0.2	0.4
ISOPENTANE	0.4	0.3	0.2
CYCLOPENTANE	0.1	0.1	0.1
HEXANES PLUS	0.3	0.2	0.2
NITROGEN	0.6	2.2	1.3
OXYGEN	TRACE	0.4	TRACE
ARGON	0.0	TRACE	0.0
HYDROGEN	0.4	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.3	0.6	0.2
HELIUM	0.03	0.03	0.05
HEATING VALUE*	1158	1189	1198
SPECIFIC GRAVITY	0.656	0.703	0.688

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 94 SAMPLE 15240	INDEX 95 SAMPLE 15479	INDEX 96 SAMPLE 15233
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	HARPER	HARPER	HARPER
FIELD	BOILING SPRINGS N	BUFFALO NW	LOVEDALE
WELL NAME	ROOT NO. 1	PROCTOR NO. 15	RUBLE NO. 1
LOCATION	SEC. 9, T25N, R20W	SEC. 35, T28N, R23W	SEC. 1, T25N, R21W
OWNER	SUN PRODUCTION CO.	KENNEDY & MITCHELL	TEXAS OIL & GAS CORP.
COMPLETED	06/15/77	10/31/78	12/08/77
SAMPLED	03/--/78	11/09/78	03/21/78
FORMATION	PENN-MORROW	MISS-CHESTER	MISS-CHESTER
GEOLOGIC PROVINCE CODE	360	360	360
DEPTH, FEET	6676	5878	6724
WELLHEAD PRESSURE,PSIG	2768	1684	2653
OPEN FLOW, MCFD	9966	3073	4800
COMPONENT, MOLE PCT			
METHANE	92.5	84.9	91.7
ETHANE	3.8	5.5	3.9
PROPANE	1.3	3.8	1.6
N-BUTANE	0.3	1.1	0.5
ISOBUTANE	0.2	0.7	0.3
N-PENTANE	0.1	0.3	0.1
ISOPENTANE	0.1	0.4	0.2
CYCLOPENTANE	0.1	0.2	TRACE
HEXANES PLUS	0.2	0.4	0.1
NITROGEN	0.9	2.2	1.1
OXYGEN	0.1	0.0	0.0
ARGON	TRACE	0.0	TRACE
HYDROGEN	0.0	0.1	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.3	0.3	0.4
HELIUM	0.07	0.13	0.09
HEATING VALUE*	1078	1176	1085
SPECIFIC GRAVITY	0.611	0.685	0.618

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 97 SAMPLE 15316	INDEX 98 SAMPLE 15482	INDEX 99 SAMPLE 15476
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	HARPER	LEFLORE	LINCOLN
FIELD	LOVEDALE NW	RED OAK N	CARNEY W
WELL NAME	CANFIELD GAS UNIT NO. 3	MACY MCBEE NO. 1	STATE ORR NO. 1
LOCATION	SEC. 23, T28N, R21W	SEC. 30, T8N, R24E	SEC. 36, T16N, R2E
OWNER	ATLANTIC RICHFIELD CO.	RESERVE OIL, INC.	SULLIVAN & CO.
COMPLETED	01/28/78	NOT GIVEN	08/01/78
SAMPLED	07/17/78	10/26/78	10/26/78
FORMATION	MISS-CHESTER	NOT GIVEN	PENN-SKINNER
GEOLOGIC PROVINCE CODE	360	345	355
DEPTH, FEET	5761	NOT GIVEN	4500
WELLHEAD PRESSURE,PSIG	1300	NOT GIVEN	1625
OPEN FLOW, MCFD	1500	NOT GIVEN	54000
COMPONENT, MOLE PCT			
METHANE	93.9	85.4	79.6
ETHANE	2.3	1.3	7.8
PROPANE	0.7	0.1	3.9
N-BUTANE	0.3	0.0	1.3
ISOBUTANE	0.1	0.0	0.7
N-PENTANE	0.1	0.0	0.5
ISOPENTANE	0.1	0.0	0.3
CYCLOPENTANE	0.1	0.0	0.2
HEXANES PLUS	0.1	0.0	0.4
NITROGEN	1.8	8.8	4.8
OXYGEN	0.0	2.3	0.4
ARGON	TRACE	0.1	TRACE
HYDROGEN	0.1	TRACE	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.3	1.9	0.0
HELIUM	0.09	0.04	0.08
HEATING VALUE*	1042	891	1177
SPECIFIC GRAVITY	0.596	0.630	0.713

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 100 SAMPLE 15248	INDEX 101 SAMPLE 15275	INDEX 102 SAMPLE 15309
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	MAJOR	MUSKOGEE	OKFUSKEE
FIELD	ORION SE	WHITEFIELD	ALABAMA
WELL NAME	THOMPSON UNIT NO. 1	HOLCOMB NO. 1	DOUGLAS NO. 2
LOCATION	SEC. 21, T20N, R15W	SEC. 24, T10N, R19E	SEC. 34, T10N, R11E
OWNER	CRESLENN OIL CO.	SERVICE DRILLING CO.	ESTORIL PRODUCING CORP.
COMPLETED	07/09/77	09/22/77	02/28/78
SAMPLED	04/05/78	05/01/78	06/27/78
FORMATION	MISS-	PENN-SPIRO	PENN-BOOCH
GEOLOGIC PROVINCE CODE	360	355	355
DEPTH, FEET	9146	2995	2124
WELLHEAD PRESSURE,PSIG	NOT GIVEN	1450	825
OPEN FLOW, MCFD	5170	1146	2825
COMPONENT, MOLE PCT			
METHANE	87.4	94.8	84.8
ETHANE	6.1	1.0	5.0
PROPANE	2.7	0.2	2.6
N-BUTANE	0.9	0.0	0.7
ISOBUTANE	0.4	0.0	0.3
N-PENTANE	0.2	0.0	0.2
ISOPENTANE	0.2	0.0	0.2
CYCLOPENTANE	0.1	0.0	0.1
HEXANES PLUS	0.2	0.0	0.2
NITROGEN	1.4	3.5	5.1
OXYGEN	0.0	0.3	0.3
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.1	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.4	0.1	0.3
HELIUM	0.04	0.12	0.11
HEATING VALUE*	1140	984	1081
SPECIFIC GRAVITY	0.656	0.578	0.660

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 103 SAMPLE 15263	INDEX 104 SAMPLE 15265	INDEX 105 SAMPLE 15245
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	OKFUSKEE	OKMULGEE	PITTSBURG
FIELD	MORGAN	BRINTON	QUINTON DISTRICT
WELL NAME	CHILDERS NO. 2-A	HALEY NO. 2-A	LASH NO. 1
LOCATION	SEC. 4, T12N, R11E	SEC. 21, T13N, R12E	SEC. 10, T7N, R18E
OWNER	LOGOS OIL INC.	BILL WADLEY & SON DRILLING	SAMSON RESOURCES CO.
COMPLETED	10/10/77	06/13/77	NOT GIVEN
SAMPLED	04/22/78	04/27/78	03/22/78
FORMATION	PENN-DUTCHER	PENN-DUTCHER	PENN-SPIRO & CROMWELL
GEOLOGIC PROVINCE CODE	355	355	345
DEPTH, FEET	2666	2188	6606
WELLHEAD PRESSURE,PSIG	600	605	1040
OPEN FLOW, MCFD	3800	28000	14480
COMPONENT, MOLE PCT			
METHANE	75.0	81.6	95.1
ETHANE	11.7	9.5	1.0
PROPANE	5.8	3.7	0.1
N-BUTANE	1.5	0.8	0.0
ISOBUTANE	0.4	0.3	0.0
N-PENTANE	0.3	0.2	0.0
ISOPENTANE	0.3	0.1	0.0
CYCLOPENTANE	0.1	TRACE	0.0
HEXANES PLUS	0.1	0.1	0.0
NITROGEN	4.5	3.2	1.7
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.2	0.3
HYDROGEN SULFIDE**	0.0	0.0	0.1
CARBON DIOXIDE	0.2	TRACE	1.6
HELIUM	0.08	0.09	0.06
HEATING VALUE*	1218	1148	985
SPECIFIC GRAVITY	0.735	0.674	0.582

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY

** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 106 SAMPLE 15222	INDEX 107 SAMPLE 15221	INDEX 108 SAMPLE 15300
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	ROGER MILLS	ROGER MILLS	ROGER MILLS
FIELD	CHEYENNE W	PEEK S	RANKIN SE
WELL NAME	STATE NO. 1-10	PENRY NO. 1	PURVIS NO. 1
LOCATION	SEC. 10, T13N, R24W	SEC. 18, T17N, R21W	SEC. 30, T13N, R25W
OWNER	HELMERICH & PAYNE, INC.	INEXCO OIL CO.	NATOMAS NORTH AMERICA, INC.
COMPLETED	09/--/76	02/03/77	01/14/77
SAMPLED	03/--/78	03/--/78	06/07/78
FORMATION	PENN-MORROW	PENN-CHEROKEE	PENN-MORROW
GEOLOGIC PROVINCE CODE	360	360	360
DEPTH, FEET	NOT GIVEN	10254	15944
WELLHEAD PRESSURE,PSIG	NOT GIVEN	2015	8945
OPEN FLOW, MCFD	NOT GIVEN	743	2716
COMPONENT, MOLE PCT			
METHANE	97.1	80.1	97.1
ETHANE	0.6	10.3	0.5
PROPANE	0.1	5.0	TRACE
N-BUTANE	TRACE	1.3	0.1
ISOBUTANE	0.0	0.7	0.0
N-PENTANE	0.1	0.3	0.1
ISOPENTANE	TRACE	0.5	0.0
CYCLOPENTANE	TRACE	0.1	TRACE
HEXANES PLUS	TRACE	0.3	0.1
NITROGEN	0.2	0.8	0.5
OXYGEN	0.0	TRACE	0.1
ARGON	TRACE	0.0	TRACE
HYDROGEN	0.0	0.0	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.8	0.5	1.3
HELIUM	0.02	0.04	0.02
HEATING VALUE*	1001	1246	1006
SPECIFIC GRAVITY	0.578	0.718	0.577

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 109 SAMPLE 15229	INDEX 110 SAMPLE 15243	INDEX 111 SAMPLE 15393
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	ROGER MILLS	STEPHENS	TEXAS
FIELD	REYDON W	SHO-VEL-TUM	GOFF CREEK
WELL NAME	KING NO. 1	FRENSLEY-MARTIN NO. 1	HAWKINS NO. B-1
LOCATION	SEC. 9, T13N, R26W	SEC. 36, T1S, R5W	SEC. 9, T4N, R14ECM
OWNER	DYCO PETROLEUM CORP.	GETTY OIL CO.	ANADARKO PRODUCTION CO.
COMPLETED	01/06/78	12/22/77	12/09/77
SAMPLED	03/13/78	03/21/78	09/27/78
FORMATION	PENN-MORROW	DEVO-HUNTON	PENN-CHEROKEE
GEOLOGIC PROVINCE CODE	360	350	360
DEPTH, FEET	15330	4290	5668
WELLHEAD PRESSURE,PSIG	9260	972	NOT GIVEN
OPEN FLOW, MCFD	7053	5202	1176
COMPONENT, MOLE PCT			
METHANE	95.4	84.5	72.9
ETHANE	0.6	7.1	7.8
PROPANE	0.1	3.1	5.8
N-BUTANE	0.0	0.8	1.6
ISOBUTANE	0.0	0.2	0.6
N-PENTANE	0.0	0.2	0.4
ISOPENTANE	0.0	0.2	0.4
CYCLOPENTANE	0.0	TRACE	0.2
HEXANES PLUS	0.0	0.1	0.4
NITROGEN	1.6	2.5	9.6
OXYGEN	0.4	0.1	TRACE
ARGON	TRACE	TRACE	0.0
HYDROGEN	0.0	0.0	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.8	1.2	0.1
HELIUM	0.02	0.04	0.18
HEATING VALUE*	980	1120	1165
SPECIFIC GRAVITY	0.584	0.669	0.753

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 112 SAMPLE 15394	INDEX 113 SAMPLE 15520	INDEX 114 SAMPLE 15332
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	TEXAS	WOODS	WOODS
FIELD	GOFF CREEK	AVARD NW	CHEYENNE VALLEY
WELL NAME	HAWKINS NO. 8-1	MALLORY NO. 1	HEPNER NO. 3
LOCATION	SEC. 9, T4N, R14ECM	SEC. 6, T26N, R14W	SEC. 34, T23N, R14W
OWNER	ANADARKO PRODUCTION CO.	SOUTHLAND ROYALTY CO.	KIRKPATRICK OIL CO.
COMPLETED	12/09/77	04/06/78	04/06/78
SAMPLED	09/27/78	11/13/78	07/28/78
FORMATION	PENN-MORROW	DEVO-HUNTON	PENN-RED FORK
GEOLOGIC PROVINCE CODE	360	360	360
DEPTH, FEET	6163	6352	6454
WELLHEAD PRESSURE,PSIG	NOT GIVEN	2200	1700
OPEN FLOW, MCFD	838	3048	1976
COMPONENT, MOLE PCT			
METHANE	78.1	87.9	88.2
ETHANE	6.3	3.7	5.2
PROPANE	5.2	1.7	2.7
N-BUTANE	1.4	0.9	0.7
ISOBUTANE	0.7	0.6	0.4
N-PENTANE	0.3	0.7	0.2
ISOPENTANE	0.3	0.7	0.2
CYCLOPENTANE	0.1	0.4	0.1
HEXANES PLUS	0.2	1.1	0.2
NITROGEN	6.9	2.2	1.6
OXYGEN	0.0	0.0	0.1
ARGON	TRACE	0.0	TRACE
HYDROGEN	0.1	0.1	TRACE
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.2	TRACE	0.2
HELIUM	0.17	0.06	0.08
HEATING VALUE*	1150	1183	1125
SPECIFIC GRAVITY	0.717	0.687	0.646

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 115 SAMPLE 15211	INDEX 116 SAMPLE 15200	INDEX 117 SAMPLE 15461
STATE	OKLAHOMA	OKLAHOMA	TEXAS
COUNTY	WOODS	WOODS	ARANSAS
FIELD	FAIRVALLEY	GREENSBURG SW	NINE MILE POINT W
WELL NAME	SNAPP "A" NO. 1	MCCRAY NO. 1	STATE TRACT 146 NO. 2
LOCATION	SEC. 12, T26N, R18W	SEC. 16, T24N, R14W	ARANSAS BAY
OWNER	AMOCO PRODUCTION CO.	TEXAS OIL & GAS CORP.	HOUSTON OIL & MINERALS CORP.
COMPLETED	12/15/77	09/26/77	05/08/77
SAMPLED	02/22/78	01/25/78	10/27/78
FORMATION	MISS-ST. GENEVIEVE	PENN-RED FORK	OLIG-FRIO D4
GEOLOGIC PROVINCE CODE	360	360	220
DEPTH, FEET	5654	6325	8244
WELLHEAD PRESSURE,PSIG	1948	2060	3215
OPEN FLOW, MCFD	5955	3200	11000
COMPONENT, MOLE PCT			
METHANE	94.0	89.3	88.5
ETHANE	3.1	5.7	5.7
PROPANE	1.1	1.9	2.5
N-BUTANE	0.4	0.4	0.6
ISOBUTANE	0.2	0.1	0.9
N-PENTANE	0.2	0.2	0.2
ISOPENTANE	0.2	0.1	0.3
CYCLOPENTANE	0.1	0.1	0.1
HEXANES PLUS	0.2	0.2	0.2
NITROGEN	0.4	1.6	0.5
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	TRACE	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.2	0.3	0.5
HELIUM	0.05	0.09	0.01
HEATING VALUE*	1088	1100	1150
SPECIFIC GRAVITY	0.608	0.631	0.654

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 118 SAMPLE 15462	INDEX 119 SAMPLE 15416	INDEX 120 SAMPLE 15252
STATE	TEXAS	TEXAS	TEXAS
COUNTY	ARANSAS	ARANSAS	AUSTIN
FIELD	NINE MILE POINT W	RATTLESNAKE POINT	SEALY W
WELL NAME	STATE TRACT 170 NO. 1	STATE LEASE 122 NO. A1	FENKE NO. 1
LOCATION	ARANSAS BAY	STATE TRACT 122	GEORGE T. ALLEN SUR. 180
OWNER	HOUSTON OIL & MINERALS CORP.	SHENANDOAH OIL CORP.	RANGER OIL CO.
COMPLETED	10/09/77	05/29/76	07/16/77
SAMPLED	10/27/78	10/16/78	04/06/78
FORMATION	OLIG-FRIO M	OLIG-FRIO	EOCE-WILCOX
GEOLOGIC PROVINCE CODE	220	220	220
DEPTH, FEET	10934	8744	8860
WELLHEAD PRESSURE,PSIG	3265	750	NOT GIVEN
OPEN FLOW, MCFD	4200	8700	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	87.8	85.5	88.0
ETHANE	6.5	7.0	4.4
PROPANE	2.8	3.6	1.7
N-BUTANE	0.6	1.0	0.5
ISOBUTANE	0.9	1.0	0.4
N-PENTANE	0.2	0.2	0.1
ISOPENTANE	0.2	0.3	0.3
CYCLOPENTANE	TRACE	0.1	0.1
HEXANES PLUS	0.1	0.2	0.2
NITROGEN	0.4	0.5	0.8
OXYGEN	TRACE	0.0	0.1
ARGON	TRACE	0.0	TRACE
HYDROGEN	0.1	0.1	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.2	0.5	3.6
HELIUM	TRACE	0.01	0.01
HEATING VALUE*	1152	1189	1076
SPECIFIC GRAVITY	0.650	0.683	0.661

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 121 SAMPLE 15253	INDEX 122 SAMPLE 15381	INDEX 123 SAMPLE 15470
STATE	TEXAS	TEXAS	TEXAS
COUNTY	AUSTIN	BRAZORIA	BRAZORIA
FIELD	SEALY W	ALLIGATOR POINT W	ALVIN N
WELL NAME	HINTZ "A" NO. 1	STATE LEASE 66709 NO. 1	REESE GU NO. 1
LOCATION	GEORGE T. ALLEN SUR. 180	BBB&C RR SUR. A-445	HT&B RR SUR. 19, A-229
OWNER	RANGER OIL CO.	GENERAL CRUDE OIL CO.	BUTTES RESOURCES CO.
COMPLETED	08/26/75	01/05/77	11/25/76
SAMPLED	04/06/78	09/25/78	10/06/78
FORMATION	EOCE-WILCOX	OLIG-FRIO	OLIG-FRIO
GEOLOGIC PROVINCE CODE	220	220	220
DEPTH, FEET	10669	12214	8108
WELLHEAD PRESSURE,PSIG	2770	7835	2832
OPEN FLOW, MCFD	12000	15457	11162
COMPONENT, MOLE PCT			
METHANE	88.9	85.3	92.5
ETHANE	4.1	6.8	3.5
PROPANE	1.2	3.0	1.6
N-BUTANE	0.4	0.7	0.4
ISOBUTANE	0.2	1.2	0.5
N-PENTANE	0.1	0.2	0.1
ISOPENTANE	0.2	0.5	0.2
CYCLOPENTANE	TRACE	0.1	TRACE
HEXANES PLUS	0.1	0.5	0.1
NITROGEN	0.4	0.3	0.6
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	0.0	TRACE
HYDROGEN	0.0	0.1	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	4.4	1.3	0.2
HELIUM	TRACE	TRACE	TRACE
HEATING VALUE*	1043	1187	1090
SPECIFIC GRAVITY	0.649	0.688	0.612

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 124 SAMPLE 15471	INDEX 125 SAMPLE 15409	INDEX 126 SAMPLE 15412
STATE	TEXAS	TEXAS	TEXAS
COUNTY	BRAZORIA	BRAZORIA	BRAZORIA
FIELD	ALVIN N	ANGLETON	BELL LAKE
WELL NAME	REESE GU NO. 1	D. M. MOODY, TRUSTEE NO. 1	BALWIN NASH YOUNG NO. 1
LOCATION	HT&B RR SUR. 19, A-229	J. W. CLOUD SUR., A-160	J. E. A. PHELPS SUR., A-117
OWNER	BUTTES RESOURCES CO.	GOLDKING PRODUCTION CO.	GEOLOGICAL RESEARCH CORP.
COMPLETED	11/25/76	12/03/76	02/15/77
SAMPLED	10/06/78	10/02/78	10/12/78
FORMATION	OLIG-FRIO	OLIG-FRIO	TERT-FRIO
GEOLOGIC PROVINCE CODE	220	220	220
DEPTH, FEET	8534	10250	9818
WELLHEAD PRESSURE,PSIG	3010	3065	4775
OPEN FLOW, MCFD	33782	3800	11700
COMPONENT, MOLE PCT			
METHANE	93.1	92.9	94.5
ETHANE	3.4	2.7	2.7
PROPANE	1.4	1.1	0.8
N-BUTANE	0.4	0.3	0.2
ISOBUTANE	0.3	0.3	0.2
N-PENTANE	0.1	0.1	0.1
ISOPENTANE	0.2	0.2	0.2
CYCLOPENTANE	0.1	0.1	0.1
HEXANES PLUS	0.1	0.2	0.2
NITROGEN	0.6	0.6	0.3
OXYGEN	0.0	0.0	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.1	0.1	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.3	1.4	0.6
HELIUM	TRACE	0.01	TRACE
HEATING VALUE*	1086	1065	1067
SPECIFIC GRAVITY	0.611	0.616	0.601

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 127 SAMPLE 15413	INDEX 128 SAMPLE 15238	INDEX 129 SAMPLE 15237
STATE	TEXAS	TEXAS	TEXAS
COUNTY	BRAZORIA	BRAZORIA	BRAZORIA
FIELD	CHOCOLATE BAYOU	PEACH POINT	PEACH POINT S
WELL NAME	GRACE MCIIVAINE GU NO. 1	AUSTIN COLLEGE NO. 1	AUSTIN COLLEGE NO. 2
LOCATION	ASA BRIGHAM SUR. A47	STEPHEN F. AUSTIN SUR. A-27	STEPHEN F. AUSTIN SUR. A-27
OWNER	SUPERIOR OIL CO.	MONSANTO CO.	MONSANTO CO.
COMPLETED	10/10/76	06/17/76	01/06/77
SAMPLED	10/16/78	03/17/78	NOT GIVEN
FORMATION	OLIG-FRIO	OLIG-FRIO A	OLIG-FRIO A
GEOLOGIC PROVINCE CODE	220	220	220
DEPTH, FEET	13566	11250	11350
WELLHEAD PRESSURE,PSIG	9056	7380	4835
OPEN FLOW, MCFD	5530	92045	28455
COMPONENT, MOLE PCT			
METHANE	89.0	94.4	94.3
ETHANE	5.1	3.0	2.8
PROPANE	1.7	0.8	0.8
N-BUTANE	0.4	0.2	0.1
ISOBUTANE	0.4	0.2	0.3
N-PENTANE	0.1	0.1	0.1
ISOPENTANE	0.3	0.1	0.1
CYCLOPENTANE	0.1	TRACE	0.1
HEXANES PLUS	0.2	0.1	0.2
NITROGEN	0.3	0.2	0.2
OXYGEN	0.0	0.0	0.0
ARGON	0.0	TRACE	0.0
HYDROGEN	0.1	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	2.4	1.0	0.9
HELIUM	TRACE	TRACE	TRACE
HEATING VALUE*	1095	1058	1062
SPECIFIC GRAVITY	0.648	0.601	0.602

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 130 SAMPLE 15180	INDEX 131 SAMPLE 15177	INDEX 132 SAMPLE 15527
STATE	TEXAS	TEXAS	TEXAS
COUNTY	BRAZORIA	BRAZORIA	BROOKS
FIELD	PLEDGER	SWEENEY	ALTA MESA E
WELL NAME	T. L. SMITH NO. 8	BERNARD RIVER LD. DEV. NO. 1	PEREZ GAS UNIT NO. 1
LOCATION	GRAY & MOORE SUR., A-65	OLIVER JONES SUR. A-78	LA ENCANTADA GRANT, A-97
OWNER	EXXON CORP.	AMOCO PRODUCTION CO.	SAMEDAN OIL CORP.
COMPLETED	08/04/76	06/27/76	04/13/76
SAMPLED	01/04/78	12/29/77	11/29/78
FORMATION	MIOC-	OLIG-FRIO	EOCE-LOMA BLANCA
GEOLOGIC PROVINCE CODE	220	220	220
DEPTH, FEET	4806	11670	8717
WELLHEAD PRESSURE,PSIG	1941	4375	6217
OPEN FLOW, MCFD	490000	2490	5800
COMPONENT, MOLE PCT			
METHANE	94.8	93.8	91.3
ETHANE	2.7	3.1	4.7
PROPANE	0.9	0.7	1.8
N-BUTANE	0.3	0.2	0.4
ISOBUTANE	0.2	0.1	0.4
N-PENTANE	0.1	0.1	0.2
ISOPENTANE	0.2	0.1	0.2
CYCLOPENTANE	0.1	TRACE	0.1
HEXANES PLUS	0.1	0.1	0.2
NITROGEN	0.4	0.4	0.1
OXYGEN	0.0	TRACE	0.0
ARGON	TRACE	TRACE	0.0
HYDROGEN	0.0	TRACE	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.3	1.4	0.5
HELIUM	TRACE	TRACE	TRACE
HEATING VALUE*	1071	1048	1114
SPECIFIC GRAVITY	0.600	0.603	0.627

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 133 SAMPLE 15214	INDEX 134 SAMPLE 15524	INDEX 135 SAMPLE 15212
STATE	TEXAS	TEXAS	TEXAS
COUNTY	BROOKS	BROOKS	BROOKS
FIELD	CARL PETERS	SANTA FE E	TIO AYOLA
WELL NAME	D. J. SULLIVAN "F" NO. 6	SANTA FE NO. 33-D	R. J. KLEBERG JR. NO. 17
LOCATION	S. A. DEL ENCINAL GT, A-370	SAN SALVADOR DEL TULE GRANT	TIO AYOLA GRANT A-389
OWNER	EXXON CO., U.S.A.	EXXON CO., U.S.A.	EXXON CO., U.S.A.
COMPLETED	12/03/73	04/19/77	01/20/75
SAMPLED	02/17/78	11/14/78	02/15/78
FORMATION	MIOC-	OLIG-MASSIVE	MIOC-B-25
GEOLOGIC PROVINCE CODE	220	220	220
DEPTH, FEET	7014	8150	1258
WELLHEAD PRESSURE,PSIG	2370	1200	485
OPEN FLOW, MCFD	3400	1700	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	93.7	94.0	98.2
ETHANE	3.0	3.5	0.2
PROPANE	1.0	0.9	TRACE
N-BUTANE	0.3	0.2	0.0
ISOBUTANE	0.3	0.3	0.0
N-PENTANE	0.2	0.1	0.0
ISOPENTANE	0.1	0.1	0.0
CYCLOPENTANE	0.1	TRACE	0.0
HEXANES PLUS	0.3	0.2	0.0
NITROGEN	0.7	0.5	1.5
OXYGEN	0.1	0.0	0.0
ARGON	0.0	TRACE	TRACE
HYDROGEN	0.0	0.1	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.2	TRACE
HELIUM	0.01	0.01	0.01
HEATING VALUE*	1081	1074	998
SPECIFIC GRAVITY	0.607	0.601	0.561

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 136 SAMPLE 15408	INDEX 137 SAMPLE 15377	INDEX 138 SAMPLE 15378
STATE	TEXAS	TEXAS	TEXAS
COUNTY	BURLESON	CHEROKEE	CHEROKEE
FIELD	CLAY NE	WHITE OAK CREEK	WHITE OAK CREEK
WELL NAME	JESSE MOORE ESTATE NO. 2	ALVIE F. JONES NO. 1	ALVIE F. JONES NO. 1
LOCATION	J. B. CHANCE SUR, A-9	G. RUDDELL SUR., A-67	G. RUDDELL SUR., A-67
OWNER	HILL PRODUCTION CO.	DAVIS OIL CO.	DAVIS OIL CO.
COMPLETED	11/27/76	02/05/77	02/05/77
SAMPLED	10/10/78	09/19/78	09/19/78
FORMATION	CRET-AUSTIN	CRET-RODESSA	CRET-PETTIT
GEOLOGIC PROVINCE CODE	220	260	260
DEPTH, FEET	11436	8522	9502
WELLHEAD PRESSURE,PSIG	4842	2550	2600
OPEN FLOW, MCFD	30500	14495	20384
COMPONENT, MOLE PCT			
METHANE	80.8	94.7	95.1
ETHANE	9.2	1.7	1.4
PROPANE	2.3	0.7	0.5
N-BUTANE	0.7	0.3	0.2
ISOBUTANE	0.5	0.2	0.2
N-PENTANE	0.2	0.2	0.1
ISOPENTANE	0.3	0.1	0.1
CYCLOPENTANE	0.1	TRACE	TRACE
HEXANES PLUS	0.3	0.2	0.2
NITROGEN	0.2	0.6	0.8
OXYGEN	0.0	0.0	0.0
ARGON	0.0	TRACE	TRACE
HYDROGEN	0.1	TRACE	TRACE
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	5.2	1.2	1.4
HELIUM	TRACE	0.02	0.02
HEATING VALUE*	1124	1048	1034
SPECIFIC GRAVITY	0.710	0.602	0.598

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 139 SAMPLE 15374	INDEX 140 SAMPLE 15239	INDEX 141 SAMPLE 15380
STATE	TEXAS	TEXAS	TEXAS
COUNTY	COLORADO	COLORADO	CROCKETT
FIELD	DUBINA S	RHINEHART	ELKHORN
WELL NAME	SCHOENEBERG A NO. 1	HUNN NO. 1	J. M. SHANNON A NO. 18
LOCATION	JESSE BURNHAM SUR. A-9	I&GN RR SUR. 11, A-297	SEC. 21, BLK. U, VGC&SP SUR.
OWNER	CITIES SERVICE CO.	GUEST & WOLFSON CO.	CONTINENTAL OIL CO.
COMPLETED	06/04/77	02/27/76	12/06/76
SAMPLED	09/12/78	03/--/78	09/19/78
FORMATION	EOCE-WILCOX	OLIG-FRIO	PERM-QUEEN
GEOLOGIC PROVINCE CODE	220	220	430
DEPTH, FEET	9165	3357	1110
WELLHEAD PRESSURE,PSIG	2220	1344	326
OPEN FLOW, MCFD	3300	7000	4900
COMPONENT, MOLE PCT			
METHANE	81.9	99.0	71.8
ETHANE	6.5	0.1	11.5
PROPANE	5.1	TRACE	2.3
N-BUTANE	1.2	0.0	0.4
ISOBUTANE	0.8	0.0	0.5
N-PENTANE	0.2	0.0	0.1
ISOPENTANE	0.3	0.0	0.2
CYCLOPENTANE	0.1	0.0	TRACE
HEXANES PLUS	0.1	0.0	0.1
NITROGEN	0.8	0.7	9.8
OXYGEN	TRACE	TRACE	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.1	0.0	0.1
HYDROGEN SULFIDE**	0.0	0.0	3.0
CARBON DIOXIDE	2.8	0.2	0.1
HELIUM	0.01	0.01	0.16
HEATING VALUE*	1176	1005	1061
SPECIFIC GRAVITY	0.712	0.560	0.716

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 142 SAMPLE 15198	INDEX 143 SAMPLE 15199	INDEX 144 SAMPLE 15325
STATE	TEXAS	TEXAS	TEXAS
COUNTY	CULBERSON	CULBERSON	EASTLAND
FIELD	KING EDWARD	KING EDWARD	SITTERLE
WELL NAME	BATEMAN STATE NO. 1-29	BATEMAN NO. 1-28	PARMER HEIRS NO. 1
LOCATION	SEC. 29, BLK. 45, PSL SUR.	SEC. 28, BLK. 45, PSL SUR.	SEC. 477, SPRR SUR.
OWNER	AMERICAN QUASAR PET. CO.	AMERICAN QUASAR PET. CO.	CHAPARRAL MINERALS, INC.
COMPLETED	12/20/77	05/08/77	05/29/77
SAMPLED	01/25/78	01/25/78	07/29/78
FORMATION	SILU-	SILU-	PENN-LAKE
GEOLOGIC PROVINCE CODE	430	430	425
DEPTH, FEET	15397	15418	3601
WELLHEAD PRESSURE,PSIG	5150	5113	1427
OPEN FLOW, MCFD	5000	8000	5600
COMPONENT, MOLE PCT			
METHANE	94.5	95.2	74.3
ETHANE	0.4	0.5	9.0
PROPANE	TRACE	TRACE	5.9
N-BUTANE	0.0	0.0	1.3
ISOBUTANE	0.0	0.0	0.7
N-PENTANE	0.0	0.0	0.3
ISOPENTANE	0.0	0.0	0.3
CYCLOPENTANE	0.0	0.0	0.1
HEXANES PLUS	0.0	0.0	0.2
NITROGEN	2.2	1.3	7.3
OXYGEN	0.1	TRACE	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	TRACE	TRACE	0.1
HYDROGEN SULFIDE**	0.1	0.2	0.0
CARBON DIOXIDE	2.6	2.6	0.2
HELIUM	0.04	0.04	0.18
HEATING VALUE*	965	975	1174
SPECIFIC GRAVITY	0.591	0.588	0.737

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 145 SAMPLE 15337	INDEX 146 SAMPLE 15268	INDEX 147 SAMPLE 15345
STATE	TEXAS	TEXAS	TEXAS
COUNTY	ERATH	FORT BEND	FREESTONE
FIELD	MINNIE	HUNGERFORD E	TEAGUE TOWNSITE
WELL NAME	MINNIE Q. LOWE NO. 1	GORDON UNIT NO. 1-X	J. W. BROWN NO. 1
LOCATION	JAMES MCCOY SUR. 29, A-563	ISAAC MCGARY SUR. A-58	GEORGE BREWER SUR., A-5
OWNER	TEXAS PACIFIC OIL CO., INC.	CADDO OIL CO.	HIGHLAND RESOURCES, INC.
COMPLETED	05/13/65	02/08/75	10/28/76
SAMPLED	08/01/78	04/19/78	08/17/78
FORMATION	PENN-STRAWN	MIOC-	JURA-COTTON VALLEY
GEOLOGIC PROVINCE CODE	415	220	260
DEPTH, FEET	1374	2542	11955
WELLHEAD PRESSURE,PSIG	645	1057	6500
OPEN FLOW, MCFD	6968	2002	11500
COMPONENT, MOLE PCT			
METHANE	83.5	98.9	95.6
ETHANE	6.5	0.1	0.7
PROPANE	3.4	TRACE	0.1
N-BUTANE	0.8	0.0	TRACE
ISOBUTANE	0.5	0.0	0.1
N-PENTANE	0.2	0.0	TRACE
ISOPENTANE	0.2	0.0	TRACE
CYCLOPENTANE	0.1	0.0	TRACE
HEXANES PLUS	0.2	0.0	0.1
NITROGEN	4.3	0.8	0.3
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.2	0.0	TRACE
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.1	2.9
HELIUM	0.18	0.01	TRACE
HEATING VALUE*	1126	1004	992
SPECIFIC GRAVITY	0.673	0.559	0.591

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 148 SAMPLE 15473	INDEX 149 SAMPLE 15472	INDEX 150 SAMPLE 15306
STATE	TEXAS	TEXAS	TEXAS
COUNTY	GALVESTON	GALVESTON	GOLIAD
FIELD	GREEN LAKE	TEICHMAN POINT	HORDES CREEK E
WELL NAME	CRESTON KING NO. 2	GALVESTON TOWNSITE NO. 16-1	W. H. BRINKOLTER NO. 1
LOCATION	WILLIAM SCOTT SUR. A-177	LOT 10 BLK 523 GALVESTON TWP	VINCENTE RAMOS SUR. A-241
OWNER	BUTTES RESOURCES CO.	BUTTES RESOURCES CO.	I. W. LOVELADY
COMPLETED	03/16/77	01/10/77	01/07/76
SAMPLED	10/06/78	10/06/78	NOT GIVEN
FORMATION	MIOC-	MIOC-D3	EOCE-WILCOX
GEOLOGIC PROVINCE CODE	220	220	220
DEPTH, FEET	6958	7583	8141
WELLHEAD PRESSURE,PSIG	2612	2683	2445
OPEN FLOW, MCFD	80000	26075	9500
COMPONENT, MOLE PCT			
METHANE	90.8	94.6	85.1
ETHANE	4.5	2.5	5.2
PROPANE	2.2	1.0	2.4
N-BUTANE	0.5	0.3	0.6
ISOBUTANE	0.7	0.5	0.5
N-PENTANE	0.2	0.1	0.2
ISOPENTANE	0.3	0.2	0.4
CYCLOPENTANE	0.1	TRACE	0.2
HEXANES PLUS	0.2	0.1	0.4
NITROGEN	0.4	0.4	2.1
OXYGEN	0.0	0.0	0.1
ARGON	0.0	TRACE	TRACE
HYDROGEN	0.1	0.1	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.2	2.5
HELIUM	TRACE	TRACE	TRACE
HEATING VALUE*	1134	1074	1109
SPECIFIC GRAVITY	0.636	0.600	0.678

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 151 SAMPLE 15220	INDEX 152 SAMPLE 15346	INDEX 153 SAMPLE 15376
STATE	TEXAS	TEXAS	TEXAS
COUNTY	HANSFORD	HARRISON	HEMPHILL
FIELD	HUNTER	SCOTTSVILLE	CANADIAN SE
WELL NAME	HUNTER NO. 1	YOUNG B GAS UNIT NO. 1	DODD NO. 1
LOCATION	SEC.147, BLK. 45, H&TC SUR.	P.DAUGHERTY SUR.,A-5	SEC. 46, BLK. M1, H&GN SUR.
OWNER	ARGONAUT ENERGY CORP.	TEXAS OIL & GAS CORP.	EARL L. SMITH & ASSOC.
COMPLETED	01/21/77	11/10/76	06/25/78
SAMPLED	03/07/78	08/15/78	09/15/78
FORMATION	PERM-WICHITA ALBANY	CRET-TRAVIS PEAK	PENN-MORROW
GEOLOGIC PROVINCE CODE	360	260	360
DEPTH, FEET	3254	6274	14456
WELLHEAD PRESSURE,PSIG	576	950	7683
OPEN FLOW, MCFD	2350	2800	7000
COMPONENT, MOLE PCT			
METHANE	75.9	91.3	95.7
ETHANE	6.7	4.8	1.4
PROPANE	3.5	1.0	0.2
N-BUTANE	0.9	0.3	0.1
ISOBUTANE	0.3	0.2	TRACE
N-PENTANE	0.3	0.2	0.1
ISOPENTANE	0.2	0.1	0.1
CYCLOPENTANE	TRACE	TRACE	0.1
HEXANES PLUS	0.1	0.2	0.2
NITROGEN	11.2	0.7	0.3
OXYGEN	0.0	TRACE	0.0
ARGON	0.1	TRACE	TRACE
HYDROGEN	0.0	TRACE	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	TRACE	1.0	1.8
HELIUM	0.82	0.01	0.02
HEATING VALUE*	1047	1077	1026
SPECIFIC GRAVITY	0.697	0.618	0.594

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 154 SAMPLE 15481	INDEX 155 SAMPLE 15280	INDEX 156 SAMPLE 15317
STATE	TEXAS	TEXAS	TEXAS
COUNTY	HEMPHILL	HEMPHILL	HEMPHILL
FIELD	GEM HEMPHILL	MENDOTA NW	MENDOTA SE
WELL NAME	ORA MORRIS NO. 4	MYRTLE FLOWERS NO. 2	CAMPBELL NO. 1
LOCATION	SEC. 92, BLK 41, H&TC RR SUR	SEC. 61, BLK. B1, H&GN SUR.	SEC. 32, BLK. 1, I&GN SUR.
OWNER	GULF OIL EXPL. & PROD. CO.	EXXON CO., U.S.A.	EDWIN L. COX
COMPLETED	08/03/78	12/31/77	12/05/77
SAMPLED	11/10/78	05/18/78	07/05/78
FORMATION	PENN-TONKAWA	PERM-GRANITE WASH	PENN-MORROW
GEOLOGIC PROVINCE CODE	360	360	360
DEPTH, FEET	8299	10372	12263
WELLHEAD PRESSURE,PSIG	1715	2611	3664
OPEN FLOW, MCFD	4000	14700	8000
COMPONENT, MOLE PCT			
METHANE	82.9	80.9	93.1
ETHANE	7.7	9.5	3.5
PROPANE	4.2	4.5	0.4
N-BUTANE	1.0	1.5	0.1
ISOBUTANE	0.5	0.7	TRACE
N-PENTANE	0.2	0.4	TRACE
ISOPENTANE	0.2	0.6	TRACE
CYCLOPENTANE	0.1	0.2	TRACE
HEXANES PLUS	0.2	0.5	0.1
NITROGEN	2.4	0.7	1.0
OXYGEN	0.0	TRACE	0.1
ARGON	0.0	0.0	TRACE
HYDROGEN	0.1	0.1	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.4	0.4	1.5
HELIUM	0.10	0.04	0.03
HEATING VALUE*	1169	1257	1025
SPECIFIC GRAVITY	0.685	0.721	0.598

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 157 SAMPLE 15258	INDEX 158 SAMPLE 15514	INDEX 159 SAMPLE 15453
STATE	TEXAS	TEXAS	TEXAS
COUNTY	HIDALGO	HIDALGO	HIDALGO
FIELD	ALAMO	HARGILL	SHEPHARD
WELL NAME	ELMER L. TYNER NO. 1	RIO FARMS NO. 2	WESSLING NO. 1
LOCATION	LABLANCA GRANT A-57	LOT 6, SEC. 13, MTL&I SUBD.	LOT 260, KELLY'S SUBDIVISION
OWNER	AMOCO PRODUCTION CO.	ENERGY RESERVES GROUP	EDWIN L. COX
COMPLETED	03/18/76	09/24/77	04/17/77
SAMPLED	04/13/78	11/24/78	10/25/78
FORMATION	OLIG-FRIO	OLIG-FRIO	OLIG-FRIO
GEOLOGIC PROVINCE CODE	220	220	220
DEPTH, FEET	9333	8860	7540
WELLHEAD PRESSURE,PSIG	900	3650	2920
OPEN FLOW, MCFD	2034	4000	3100
COMPONENT, MOLE PCT			
METHANE	94.2	96.2	93.1
ETHANE	3.3	2.2	3.8
PROPANE	0.8	0.3	1.2
N-BUTANE	0.3	0.0	0.3
ISOBUTANE	0.4	0.0	0.4
N-PENTANE	0.2	0.0	0.1
ISOPENTANE	0.1	0.0	0.2
CYCLOPENTANE	TRACE	0.0	TRACE
HEXANES PLUS	0.2	0.0	0.2
NITROGEN	0.4	1.1	0.6
OXYGEN	0.1	0.0	0.0
ARGON	TRACE	TRACE	0.0
HYDROGEN	0.0	0.1	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.1	0.2
HELIUM	TRACE	0.01	TRACE
HEATING VALUE*	1081	1023	1089
SPECIFIC GRAVITY	0.604	0.578	0.612

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 160 SAMPLE 15454	INDEX 161 SAMPLE 15358	INDEX 162 SAMPLE 15359
STATE	TEXAS	TEXAS	TEXAS
COUNTY	HIDALGO	HOOD	HOOD
FIELD	SHEPHARD	BRATTEN	BRATTEN
WELL NAME	WESSLING NO. 1	BRATTEN RANCH NO. 2	BRATTEN RANCH NO. 4
LOCATION	LOT 260, KELLY'S SUBDIVISION	T. STANBURY SUR.,A-498	J. DOANE SUR. A-145
OWNER	EDWIN L. COX	GULF OIL EXPL. & PROD. CO.	GULF OIL EXPL. & PROD. CO.
COMPLETED	04/17/77	01/16/77	05/16/77
SAMPLED	10/25/78	08/25/78	08/25/78
FORMATION	OLIG-FRIO	PENN-MARBLE FALLS	PENN-BIG SALINE
GEOLOGIC PROVINCE CODE	220	415	415
DEPTH, FEET	7307	4760	4636
WELLHEAD PRESSURE,PSIG	1550	1630	1478
OPEN FLOW, MCFD	1900	2375	3650
COMPONENT, MOLE PCT			
METHANE	92.9	66.3	72.6
ETHANE	3.6	14.5	13.0
PROPANE	1.4	8.5	7.1
N-BUTANE	0.3	2.9	1.8
ISOBUTANE	0.4	1.7	1.1
N-PENTANE	0.1	1.0	0.5
ISOPENTANE	0.2	1.0	0.5
CYCLOPENTANE	TRACE	0.3	0.1
HEXANES PLUS	0.2	1.1	0.4
NITROGEN	0.6	2.2	2.2
OXYGEN	TRACE	0.1	TRACE
ARGON	TRACE	0.0	0.0
HYDROGEN	TRACE	0.1	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.2	0.2	0.3
HELIUM	0.01	0.12	0.09
HEATING VALUE*	1089	1460	1318
SPECIFIC GRAVITY	0.611	0.863	0.775

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 163 SAMPLE 15361	INDEX 164 SAMPLE 15186	INDEX 165 SAMPLE 15400
STATE	TEXAS	TEXAS	TEXAS
COUNTY	HOOD	JACKSON	JACKSON
FIELD	MCINTOSH	GANADO NW	MCDANIEL
WELL NAME	W. D. WILKERSON NO. 1	C. F. SPENCER ESTATE NO. 4	WILLIAM BORCHERS NO. 3
LOCATION	MCKINNEY&WILLIAMS SUR.A-411	A. B. WILLIAMS SUR. A-270	20 MI. EAST OF VICTORIA
OWNER	GULF OIL EXPL. & PROD. CO.	MILLICAN OIL CO.	DIXEL RESOURCES, INC.
COMPLETED	04/27/77	08/05/75	NOT GIVEN
SAMPLED	08/25/78	01/09/78	10/05/78
FORMATION	PENN-BIG SALINE	MIOC-CATAHOULA	OLIG-FRIO
GEOLOGIC PROVINCE CODE	415	220	220
DEPTH, FEET	4864	3160	3600
WELLHEAD PRESSURE,PSIG	1657	1248	NOT GIVEN
OPEN FLOW, MCFD	7500	34000	320
COMPONENT, MOLE PCT			
METHANE	73.1	98.8	97.8
ETHANE	12.2	0.1	0.2
PROPANE	6.9	0.1	TRACE
N-BUTANE	2.0	TRACE	TRACE
ISOBUTANE	1.2	TRACE	TRACE
N-PENTANE	0.5	0.1	TRACE
ISOPENTANE	0.7	0.0	TRACE
CYCLOPENTANE	0.1	0.1	0.1
HEXANES PLUS	0.4	0.1	0.1
NITROGEN	2.5	0.4	1.2
OXYGEN	0.1	0.0	0.2
ARGON	0.0	0.0	TRACE
HYDROGEN	0.1	TRACE	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.3	0.3	0.3
HELIUM	0.09	0.01	0.01
HEATING VALUE*	1322	1018	1004
SPECIFIC GRAVITY	0.781	0.567	0.568

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 166 SAMPLE 15401	INDEX 167 SAMPLE 15402	INDEX 168 SAMPLE 15403
STATE	TEXAS	TEXAS	TEXAS
COUNTY	JACKSON	JACKSON	JACKSON
FIELD	MCDANIEL	MCDANIEL	MCDANIEL
WELL NAME	WILLIAM BORCHERS NO. 2	WILLIAM BORCHERS NO. 1-C	WILLIAM BORCHERS NO. 1-T
LOCATION	THOMAS BRIDGES SUR. A-94	THOMAS BRIDGES SUR. A-94	THOMAS BRIDGES SUR. A-94
OWNER	DIXEL RESOURCES, INC.	DIXEL RESOURCES,INC.	DIXEL RESOURCES, INC.
COMPLETED	06/28/77	03/23/77	03/23/77
SAMPLED	10/05/78	10/05/78	10/05/78
FORMATION	OLIG-FRIO	OLIG-FRIO	OLIG-FRIO
GEOLOGIC PROVINCE CODE	220	220	220
DEPTH, FEET	2833	2900	3330
WELLHEAD PRESSURE,PSIG	1250	1240	1200
OPEN FLOW, MCFD	23000	310	1800
COMPONENT, MOLE PCT			
METHANE	96.7	98.5	97.4
ETHANE	0.1	0.1	0.1
PROPANE	TRACE	TRACE	TRACE
N-BUTANE	TRACE	0.0	TRACE
ISOBUTANE	0.0	0.0	0.0
N-PENTANE	TRACE	0.0	TRACE
ISOPENTANE	TRACE	0.0	TRACE
CYCLOPENTANE	TRACE	0.0	TRACE
HEXANES PLUS	0.1	0.0	0.1
NITROGEN	2.2	0.8	1.6
OXYGEN	0.3	0.1	0.2
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	TRACE	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.4	0.4	0.4
HELIUM	0.01	0.01	0.01
HEATING VALUE*	986	1000	994
SPECIFIC GRAVITY	0.571	0.562	0.568

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 169 SAMPLE 15480	INDEX 170 SAMPLE 15525	INDEX 171 SAMPLE 15526
STATE	TEXAS	TEXAS	TEXAS
COUNTY	JACKSON	JIM HOGG	JIM HOGG
FIELD	WESTHOFF RANCH	KELSEY DEEP	KELSEY DEEP
WELL NAME	MCDOWELL NO. 2	MRS. A. M. K. BASS NO. 32-F	MRS. A. M. K. BASS NO. 32-D
LOCATION	THOMAS MENEFEE LEAGUE, A-52	LA BLANCA GRANT	LA BLANCA GRANT
OWNER	HOLLY ENERGY CORP.	EXXON CO., U.S.A.	EXXON CO., U.S.A.
COMPLETED	07/24/77	02/04/77	02/02/77
SAMPLED	11/08/78	11/21/78	11/21/78
FORMATION	OLIG-FRIO	OLIG-FRIO	OLIG-FRIO
GEOLOGIC PROVINCE CODE	220	220	220
DEPTH, FEET	4943	5910	6638
WELLHEAD PRESSURE,PSIG	1528	2337	3688
OPEN FLOW, MCFD	3200	2528	5308
COMPONENT, MOLE PCT			
METHANE	98.2	89.7	92.7
ETHANE	1.0	4.6	3.9
PROPANE	0.1	2.0	1.5
N-BUTANE	TRACE	0.8	0.4
ISOBUTANE	TRACE	1.0	0.3
N-PENTANE	TRACE	0.4	0.1
ISOPENTANE	0.0	0.5	0.2
CYCLOPENTANE	TRACE	0.1	0.1
HEXANES PLUS	0.1	0.4	0.2
NITROGEN	0.3	0.2	0.2
OXYGEN	0.0	TRACE	TRACE
ARGON	TRACE	0.0	TRACE
HYDROGEN	0.2	0.1	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	TRACE	TRACE	0.2
HELIUM	0.01	TRACE	TRACE
HEATING VALUE*	1021	1167	1099
SPECIFIC GRAVITY	0.562	0.653	0.614

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 172 SAMPLE 15441	INDEX 173 SAMPLE 15230	INDEX 174 SAMPLE 15241
STATE	TEXAS	TEXAS	TEXAS
COUNTY	JIM WELLS	JIM WELLS	JIM WELLS
FIELD	HOELSCHER	SEELIGSON	SEELIGSON
WELL NAME	HOELSCHER NO. 1	SELLIGSON UNIT NO. 1-241	SEELIGSON UNIT NO. 1-241
LOCATION	10 MI. NE ALICE	5 MI. NE OF PREMONT	5 MI. NE OF PREMONT
OWNER	DINERO OIL CO.	SUN PRODUCTION CO.	SUN PRODUCTION CO.
COMPLETED	12/31/76	09/03/76	09/03/76
SAMPLED	10/13/78	03/15/78	03/15/78
FORMATION	OLIG-FRIO	OLIG-FRIO	OLIG-FRIO
GEOLOGIC PROVINCE CODE	220	220	220
DEPTH, FEET	5500	4276	4788
WELLHEAD PRESSURE,PSIG	1050	1495	1490
OPEN FLOW, MCFD	8000	3977	3444
COMPONENT, MOLE PCT			
METHANE	91.5	89.2	96.0
ETHANE	4.5	4.5	2.8
PROPANE	1.7	2.0	0.3
N-BUTANE	0.4	0.5	0.1
ISOBUTANE	0.4	0.9	0.1
N-PENTANE	0.1	0.2	TRACE
ISOPENTANE	0.2	0.7	0.1
CYCLOPENTANE	0.1	0.6	0.1
HEXANES PLUS	0.2	1.1	0.1
NITROGEN	0.3	0.2	0.3
OXYGEN	TRACE	0.0	TRACE
ARGON	0.0	0.0	TRACE
HYDROGEN	0.0	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.4	0.0	0.1
HELIUM	TRACE	TRACE	TRACE
HEATING VALUE*	1105	1201	1050
SPECIFIC GRAVITY	0.622	0.673	0.583

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 175 SAMPLE 15456	INDEX 176 SAMPLE 15178	INDEX 177 SAMPLE 15289
STATE	TEXAS	TEXAS	TEXAS
COUNTY	KARNES	KENEDY	KLEBERG
FIELD	RUNGE E	CABAZAS	WILDCAT
WELL NAME	GAUS A NO. 1	YTURRIA L & C CO. NO. 37	G. P. WARDNER NO. 127
LOCATION	VICTOR BLANCO SUR., A-3	SAN JUAN DECARRICITOS GRANT	PASO ANCHO DE ABAJO GNT.
OWNER	CITIES SERVICE CO.	TEXACO INC.	CHAMPLIN PETROLEUM CO.
COMPLETED	06/20/76	04/06/76	10/16/76
SAMPLED	10/19/78	NOT GIVEN	05/--/78
FORMATION	OLIG-HACKNEY	MIOC-	OLIG-VICKSBURG
GEOLOGIC PROVINCE CODE	220	220	220
DEPTH, FEET	9710	6040	8662
WELLHEAD PRESSURE,PSIG	3450	2397	5330
OPEN FLOW, MCFD	5400	15147	82000
COMPONENT, MOLE PCT			
METHANE	85.1	95.8	89.0
ETHANE	5.8	1.4	4.5
PROPANE	3.4	0.2	2.2
N-BUTANE	1.1	0.1	0.7
ISOBUTANE	0.8	TRACE	0.9
N-PENTANE	0.3	0.1	0.3
ISOPENTANE	0.4	TRACE	0.4
CYCLOPENTANE	0.1	TRACE	0.2
HEXANES PLUS	0.2	0.1	0.5
NITROGEN	0.4	2.0	0.3
OXYGEN	TRACE	0.2	0.0
ARGON	TRACE	TRACE	0.0
HYDROGEN	TRACE	TRACE	TRACE
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	2.4	0.1	1.0
HELIUM	TRACE	0.01	TRACE
HEATING VALUE*	1162	1014	1156
SPECIFIC GRAVITY	0.691	0.580	0.663

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 178 SAMPLE 15290	INDEX 179 SAMPLE 15190	INDEX 180 SAMPLE 15191
STATE	TEXAS	TEXAS	TEXAS
COUNTY	KLEBERG	LAVACA	LAVACA
FIELD	WILDCAT	BORCHERS	BORCHERS
WELL NAME	G. P. WARDNER NO. 127	D. B. PLOEGER NO. 1	D. B. PLOEGER NO. 1
LOCATION	PASO ANCHO DE ABAJO GNT.	ELLEN FAGAN SUR. A-571	ELLEN FAGAN SUR. A-571
OWNER	CHAMPLIN PETROLEUM CO.	SUPERIOR OIL CO.	SUPERIOR OIL CO.
COMPLETED	10/16/76	08/04/74	08/04/74
SAMPLED	05/--/78	01/14/78	01/14/78
FORMATION	OLIG-VICKSBURG	MIOC-	MIOC-
GEOLOGIC PROVINCE CODE	220	220	220
DEPTH, FEET	8662	1894	1894
WELLHEAD PRESSURE,PSIG	5330	645	645
OPEN FLOW, MCFD	82000	4720	4720
COMPONENT, MOLE PCT			
METHANE	92.3	98.9	99.0
ETHANE	4.1	0.1	TRACE
PROPANE	1.4	TRACE	TRACE
N-BUTANE	0.4	TRACE	TRACE
ISOBUTANE	0.3	TRACE	TRACE
N-PENTANE	0.1	0.1	0.1
ISOPENTANE	0.2	0.0	0.0
CYCLOPENTANE	TRACE	0.1	TRACE
HEXANES PLUS	0.1	0.1	0.1
NITROGEN	0.2	0.5	0.5
OXYGEN	0.0	0.1	0.1
ARGON	TRACE	TRACE	TRACE
HYDROGEN	TRACE	TRACE	TRACE
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.9	0.1	0.1
HELIUM	TRACE	0.01	0.01
HEATING VALUE*	1086	1017	1012
SPECIFIC GRAVITY	0.617	0.565	0.562

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 181 SAMPLE 15179	INDEX 182 SAMPLE 15438	INDEX 183 SAMPLE 15392
STATE	TEXAS	TEXAS	TEXAS
COUNTY	LAVACA	LAVACA	LIBERTY
FIELD	RAGSDALE RANCH	SPEAKS SW	CLEVELAND S
WELL NAME	J. R. RAGSDALE NO. 1	I. S. EAVES NO. 1	WILMA D. GASKAMP NO. 1
LOCATION	JAMES RYAN SUR., A-42	JAMES CHESHER SR. SUR. A-114	MAURICE SMITH SUR. A-105
OWNER	HUGHES & HUGHES OIL & GAS	WAINOCO OIL & GAS CO.	ATAPCO
COMPLETED	02/04/75	04/14/77	08/19/76
SAMPLED	01/06/78	10/16/78	09/26/78
FORMATION	EOCE-WILCOX	EOCE-YEGUA	EOCE-YEGUA
GEOLOGIC PROVINCE CODE	220	220	220
DEPTH, FEET	8364	5450	6625
WELLHEAD PRESSURE,PSIG	2885	2091	2493
OPEN FLOW, MCFD	13000	3700	5900
COMPONENT, MOLE PCT			
METHANE	89.7	91.6	86.9
ETHANE	4.4	5.1	6.6
PROPANE	1.6	1.6	2.9
N-BUTANE	0.5	0.3	0.6
ISOBUTANE	0.2	0.3	0.4
N-PENTANE	0.1	0.1	0.1
ISOPENTANE	0.2	0.2	0.2
CYCLOPENTANE	TRACE	0.1	0.1
HEXANES PLUS	0.1	0.2	0.1
NITROGEN	0.3	0.3	0.9
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	TRACE	TRACE	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	2.7	0.3	1.0
HELIUM	0.01	0.01	0.01
HEATING VALUE*	1071	1108	1129
SPECIFIC GRAVITY	0.638	0.622	0.654

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 184 SAMPLE 15283	INDEX 185 SAMPLE 15183	INDEX 186 SAMPLE 15519
STATE	TEXAS	TEXAS	TEXAS
COUNTY	LIPSCOMB	LIVE OAK	LOVING
FIELD	NORTHRUP	OAKVILLE E	HARRISON RANCH
WELL NAME	W. T. TREGELLAS-A NO. 1	H. L. HINTON GU 1 NO 1	HARRISON NO. 10-1
LOCATION	SEC. 675, BLK. 43, H&TC SUR.	JAMES MCGLOIN SUR, A-26	SEC. 10, BLK 29, PSL SUR.
OWNER	DIAMOND SHAMROCK CORP.	NEUMIN PRODUCTION CO.	HUNT PETROLEUM CORP.
COMPLETED	04/04/78	07/08/76	10/08/77
SAMPLED	05/25/78	12/28/77	11/17/78
FORMATION	PENN-CLEVELAND	EOCE-SLICK	PENN-MORROW
GEOLOGIC PROVINCE CODE	360	220	430
DEPTH, FEET	730	6759	16294
WELLHEAD PRESSURE,PSIG	1750	2374	11370
OPEN FLOW, MCFD	6000	2600	4500
COMPONENT, MOLE PCT			
METHANE	85.8	88.3	96.6
ETHANE	6.8	5.7	1.7
PROPANE	3.7	2.2	0.2
N-BUTANE	1.0	0.5	0.1
ISOBUTANE	0.3	0.3	0.0
N-PENTANE	0.2	0.1	TRACE
ISOPENTANE	0.2	0.2	TRACE
CYCLOPENTANE	0.1	0.1	TRACE
HEXANES PLUS	0.2	0.1	0.1
NITROGEN	1.1	0.2	0.5
OXYGEN	TRACE	0.0	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.4	2.2	0.7
HELIUM	0.10	TRACE	0.01
HEATING VALUE*	1162	1102	1023
SPECIFIC GRAVITY	0.667	0.649	0.577

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 187 SAMPLE 15396	INDEX 188 SAMPLE 15535	INDEX 189 SAMPLE 15350
STATE	TEXAS	TEXAS	TEXAS
COUNTY	MATAGORDA	MONTGOMERY	MOORE
FIELD	HAWKINSVILLE N	CONROE W	HUGOTON, TEXAS
WELL NAME	NORA CALDWELL NO. 1	DAN H. MADELEY NO. 1	FLORES NO. 28
LOCATION	A. C. BUCKNER LEAGUE, A-10	JAMES PAVEHOUSE SUR.	SEC. 87, BLK. 3T, T&NO SUR.
OWNER	H. L. HAWKINS, JR.	MITCHELL ENERGY CORP.	DIAMOND SHAMROCK CORP.
COMPLETED	03/24/77	01/13/78	05/30/78
SAMPLED	10/02/78	12/12/78	08/24/78
FORMATION	OLIG-FRIO	EOCE-HOCKLEY	PERM-WICHITA ALBANY
GEOLOGIC PROVINCE CODE	220	220	440
DEPTH, FEET	11200	4055	3018
WELLHEAD PRESSURE,PSIG	1600	1575	172
OPEN FLOW, MCFD	4200	16330	6300
COMPONENT, MOLE PCT			
METHANE	84.3	97.9	73.3
ETHANE	4.4	0.4	6.6
PROPANE	2.9	TRACE	4.0
N-BUTANE	0.9	0.1	1.1
ISOBUTANE	2.4	0.0	0.4
N-PENTANE	0.8	TRACE	0.2
ISOPENTANE	0.3	TRACE	0.2
CYCLOPENTANE	0.5	0.1	TRACE
HEXANES PLUS	1.8	0.1	0.1
NITROGEN	0.7	1.0	13.1
OXYGEN	0.1	0.1	0.0
ARGON	0.0	TRACE	0.1
HYDROGEN	TRACE	0.1	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.0	0.1	0.1
HELIUM	TRACE	0.01	0.62
HEATING VALUE*	1277	1012	1038
SPECIFIC GRAVITY	0.743	0.567	0.712

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 190 SAMPLE 15203	INDEX 191 SAMPLE 15236	INDEX 192 SAMPLE 15407
STATE	TEXAS	TEXAS	TEXAS
COUNTY	NUECES	NUECES	NUECES
FIELD	ARNOLD-DAVID	ARNOLD-DAVID	ROCKETT
WELL NAME	CHAPMAN HEIRS "A" NO. 44-1	CHAPMAN HEIRS "A" NO. 114-1	L. R. STANDLEE NO. 1
LOCATION	CHAPMAN RANCH	CORPUS CHRISTI GRANT A-411	V. L. DEHERRERA GT. A-2661
OWNER	HNG OIL CO.	HNG OIL CO.	MCCORMICK OIL & GAS CORP.
COMPLETED	07/01/76	10/24/77	08/20/77
SAMPLED	01/30/78	03/20/78	10/10/78
FORMATION	OLIG-FRIO	OLIG-FRIO	OLIG-FRIO
GEOLOGIC PROVINCE CODE	220	220	220
DEPTH, FEET	10000	10124	6800
WELLHEAD PRESSURE,PSIG	4725	7000	2625
OPEN FLOW, MCFD	7000	20500	13000
COMPONENT, MOLE PCT			
METHANE	91.7	93.1	81.6
ETHANE	4.4	3.9	4.9
PROPANE	1.6	1.1	3.4
N-BUTANE	0.4	0.3	1.5
ISOBUTANE	0.3	0.3	2.0
N-PENTANE	0.2	0.1	1.0
ISOPENTANE	0.2	0.1	2.1
CYCLOPENTANE	TRACE	TRACE	0.3
HEXANES PLUS	0.2	0.2	1.8
NITROGEN	0.3	0.3	1.1
OXYGEN	0.0	0.0	0.2
ARGON	TRACE	TRACE	0.0
HYDROGEN	0.0	0.0	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.8	0.5	TRACE
HELIUM	TRACE	TRACE	TRACE
HEATING VALUE*	1100	1081	1357
SPECIFIC GRAVITY	0.625	0.608	0.780

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 193 SAMPLE 15445	INDEX 194 SAMPLE 15291	INDEX 195 SAMPLE 15312
STATE	TEXAS	TEXAS	TEXAS
COUNTY	NUECES	NUECES	OCHILTREE
FIELD	STRATTON	WILDCAT	SHARE
WELL NAME	G. P. WARDNER NO. 128	CHAPMAN RANCH NO. 4	DAVOL NO. 1
LOCATION	SEC. 14,STRATTON SUBDIVSN	SEC. 80, LAURELES FARM TR.	SEC. 59, BLK. 4, GH&H SUR.
OWNER	CHAMPLIN PETROLEUM CO.	CHAMPLIN PETROLEUM CO.	KENNEDY & MITCHELL
COMPLETED	03/18/77	09/02/76	08/25/77
SAMPLED	10/19/78	05/--/78	06/26/78
FORMATION	OLIG-VICKSBURG	-LAGARTO	PENN-MORROW
GEOLOGIC PROVINCE CODE	220	220	360
DEPTH, FEET	8260	3518	7488
WELLHEAD PRESSURE,PSIG	2145	1393	800
OPEN FLOW, MCFD	42000	9000	450
COMPONENT, MOLE PCT			
METHANE	62.6	93.6	89.9
ETHANE	8.2	0.5	4.9
PROPANE	8.4	0.1	2.2
N-BUTANE	4.1	0.0	0.7
ISOBUTANE	4.1	0.0	0.3
N-PENTANE	1.5	0.0	0.2
ISOPENTANE	3.5	0.0	0.3
CYCLOPENTANE	0.6	0.0	0.1
HEXANES PLUS	2.1	0.0	0.3
NITROGEN	0.4	5.7	0.5
OXYGEN	TRACE	0.0	0.0
ARGON	0.0	TRACE	0.0
HYDROGEN	0.1	TRACE	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	4.5	0.1	0.6
HELIUM	TRACE	0.03	0.04
HEATING VALUE*	1619	960	1130
SPECIFIC GRAVITY	1.008	0.582	0.643

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 196 SAMPLE 15357	INDEX 197 SAMPLE 15324	INDEX 198 SAMPLE 15344
STATE	TEXAS	TEXAS	TEXAS
COUNTY	PANOLA	PARKER	PARKER
FIELD	CARTHAGE SE	LAKE MINERAL WELLS	LAKE MINERAL WELLS
WELL NAME	KNIGHT-STRONG GU NO. 1	N. G. WATKINS NO. 1	T. M. CHRISTIAN NO. 1
LOCATION	GEORGE GILLASPY SUR. A-222	MEP&PRR SUR. 357, A-1543	SEC. 358, T&P RR CO. SUR.
OWNER	DELTA DRILLING CO.	MITCHELL ENERGY CORP.	TEXAS PACIFIC OIL CO., INC.
COMPLETED	03/--/77	10/11/77	04/01/77
SAMPLED	08/30/78	08/02/78	08/12/78
FORMATION	JURA-COTTON VALLEY	PENN-ATOKA	PENN-CONGLOMERATE
GEOLOGIC PROVINCE CODE	260	420	420
DEPTH, FEET	9030	4178	4086
WELLHEAD PRESSURE,PSIG	3500	1650	1471
OPEN FLOW, MCFD	9800	25750	3389
COMPONENT, MOLE PCT			
METHANE	85.1	75.9	74.8
ETHANE	7.7	10.6	11.0
PROPANE	2.6	6.7	7.1
N-BUTANE	0.7	1.6	1.7
ISOBUTANE	0.6	1.0	1.0
N-PENTANE	0.2	0.3	0.4
ISOPENTANE	0.2	0.5	0.6
CYCLOPENTANE	0.1	0.1	0.1
HEXANES PLUS	0.2	0.2	0.3
NITROGEN	0.8	2.9	2.5
OXYGEN	0.0	TRACE	TRACE
ARGON	0.0	TRACE	0.0
HYDROGEN	0.1	TRACE	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.7	0.2	0.2
HELIUM	0.01	0.11	0.11
HEATING VALUE*	1143	1268	1292
SPECIFIC GRAVITY	0.672	0.750	0.760

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 199 SAMPLE 15362	INDEX 200 SAMPLE 15320	INDEX 201 SAMPLE 15522
STATE	TEXAS	TEXAS	TEXAS
COUNTY	PARKER	PECOS	PECOS
FIELD	MONCRIEF RANCH	ELSINORE	GOMEZ
WELL NAME	MONCRIEF RANCH NO. 1	MONTGOMERY-FULK NO. 11	RAYMAL EAGLE NO. 1
LOCATION	T. H. WOOLEY SUR., A-1674	SEC. 9, BLK. 170, TTRR CO.	SEC. 3, BLK. 142, T&STL SUR.
OWNER	W. A. MONCRIEF, JR.	TEXAS PACIFIC OIL CO., INC.	GIFFORD-MITCHELL-WISENBAKER
COMPLETED	05/19/75	01/15/78	07/31/78
SAMPLED	08/24/78	07/19/78	11/22/78
FORMATION	PENN-STRAWN	SILU-FUSSELMAN	DEVO-
GEOLOGIC PROVINCE CODE	420	430	430
DEPTH, FEET	2768	13365	18900
WELLHEAD PRESSURE,PSIG	880	1868	7039
OPEN FLOW, MCFD	8000	89536	15100
COMPONENT, MOLE PCT			
METHANE	89.2	51.9	95.1
ETHANE	3.8	0.2	0.3
PROPANE	1.6	0.1	TRACE
N-BUTANE	0.4	TRACE	TRACE
ISOBUTANE	0.2	TRACE	0.0
N-PENTANE	0.1	TRACE	TRACE
ISOPENTANE	0.1	TRACE	TRACE
CYCLOPENTANE	TRACE	0.1	TRACE
HEXANES PLUS	0.1	0.1	0.1
NITROGEN	3.8	0.8	0.7
OXYGEN	TRACE	TRACE	0.0
ARGON	0.0	TRACE	TRACE
HYDROGEN	0.1	TRACE	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	46.6	3.6
HELIUM	0.31	0.03	0.01
HEATING VALUE*	1047	541	974
SPECIFIC GRAVITY	0.618	1.017	0.595

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 202 SAMPLE 15328	INDEX 203 SAMPLE 15302	INDEX 204 SAMPLE 15336
STATE	TEXAS	TEXAS	TEXAS
COUNTY	PECOS	PECOS	REEVES
FIELD	HERSHEY W	SIERRA MADERA	MARSH S
WELL NAME	HERSHENSON NO. 1	SIERRA MADERA NO. 1	REEVES STATE NO. 1-22
LOCATION	SEC. 5, BLK. 51, T&PRR CO.	SEC. 68, BLK. D, GS&SF SUR.	SEC. 22, BLK. 45, PSL SUR.
OWNER	NORTHERN NATURAL GAS CO.	L. R. FRENCH, JR.	CHEVRON U.S.A.,INC.
COMPLETED	09/25/77	03/22/77	08/27/77
SAMPLED	08/01/78	06/01/78	07/31/78
FORMATION	DEVO-MONTOYA	DEVO-	PERM-DELAWARE
GEOLOGIC PROVINCE CODE	430	430	430
DEPTH, FEET	15445	12700	2688
WELLHEAD PRESSURE,PSIG	4926	3000	1149
OPEN FLOW, MCFD	20500	8000	2900
COMPONENT, MOLE PCT			
METHANE	94.9	92.0	98.6
ETHANE	0.4	0.2	0.1
PROPANE	0.0	0.1	TRACE
N-BUTANE	0.1	0.0	TRACE
ISOBUTANE	0.0	0.0	TRACE
N-PENTANE	0.2	0.0	TRACE
ISOPENTANE	TRACE	0.0	TRACE
CYCLOPENTANE	TRACE	0.0	TRACE
HEXANES PLUS	0.1	0.0	0.1
NITROGEN	0.6	1.1	0.7
OXYGEN	TRACE	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.1	0.1	TRACE
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	3.7	6.6	0.4
HELIUM	0.01	0.02	0.01
HEATING VALUE*	986	938	1006
SPECIFIC GRAVITY	0.603	0.625	0.564

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 205 SAMPLE 15353	INDEX 206 SAMPLE 15538	INDEX 207 SAMPLE 15410
STATE	TEXAS	TEXAS	TEXAS
COUNTY	REEVES	REEVES	REFUGIO
FIELD	NOT GIVEN	SAN MARTINE	TOM O'CONNER
WELL NAME	J. B. YOUNG NO. 1	CALDWELL STATE NO. 1	FANNIE V. W. HEARD NO. 70
LOCATION	SEC. 2,BLK.50,T-7,P&PRR SUR.	SEC. 9, BLK. 71, PSL SUR.	THOMAS H. WEBB SUR., A-298
OWNER	W. W. BUCHANAN	DYCO PETROLEUM CORP.	QUINTANA PETROLEUM CORP.
COMPLETED	10/16/77	08/15/77	01/18/77
SAMPLED	08/28/78	12/13/78	10/09/78
FORMATION	PERM-DELAWARE	DEVO-	MIOC-CATAHOULA
GEOLOGIC PROVINCE CODE	430	430	220
DEPTH, FEET	5103	10680	4044
WELLHEAD PRESSURE,PSIG	2206	3600	1505
OPEN FLOW, MCFD	3240	2900	27800
COMPONENT, MOLE PCT			
METHANE	90.4	90.5	98.3
ETHANE	4.0	3.2	0.6
PROPANE	0.5	0.6	0.1
N-BUTANE	0.2	0.2	TRACE
ISOBUTANE	0.3	TRACE	TRACE
N-PENTANE	TRACE	0.1	TRACE
ISOPENTANE	0.2	TRACE	TRACE
CYCLOPENTANE	0.1	TRACE	0.1
HEXANES PLUS	0.1	0.1	0.1
NITROGEN	4.0	0.8	0.5
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.1	TRACE	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	4.4	0.2
HELIUM	0.06	0.01	0.01
HEATING VALUE*	1035	1006	1018
SPECIFIC GRAVITY	0.612	0.629	0.566

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 208 SAMPLE 15373	INDEX 209 SAMPLE 15395	INDEX 210 SAMPLE 15529
STATE	TEXAS	TEXAS	TEXAS
COUNTY	ROBERTS	ROBERTS	ROBERTS
FIELD	CARRIE KILLEBREW	CARRIE KILLEBREW	RED DEER CREEK
WELL NAME	MORRISON NO. 1	MORRISON NO. 2	VOLLMENT NO. 1
LOCATION	SEC. 212, BLK 42, H&TC SUR.	SEC. 213, BLK. 42, H&TC SUR.	SEC. 32, BLK. B1 H&GN SUR.
OWNER	PIONEER PRODUCTION CORP.	EASON OIL CO.	DAVIS OIL CO.
COMPLETED	04/--/78	NOT GIVEN	NOT GIVEN
SAMPLED	09/12/78	09/--/78	12/--/78
FORMATION	PENN-MORROW	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	360	360	360
DEPTH, FEET	8618	NOT GIVEN	NOT GIVEN
WELLHEAD PRESSURE,PSIG	1480	NOT GIVEN	NOT GIVEN
OPEN FLOW, MCFD	59000	NOT GIVEN	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	81.5	74.2	89.1
ETHANE	10.7	9.8	6.8
PROPANE	4.3	3.8	1.6
N-BUTANE	0.9	0.8	0.2
ISOBUTANE	0.3	0.2	0.1
N-PENTANE	0.2	0.2	0.1
ISOPENTANE	0.3	0.2	0.1
CYCLOPENTANE	0.1	0.1	TRACE
HEXANES PLUS	0.2	0.3	0.1
NITROGEN	0.7	5.5	0.4
OXYGEN	0.0	0.5	0.0
ARGON	0.0	TRACE	TRACE
HYDROGEN	0.1	TRACE	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.8	4.1	1.3
HELIUM	0.05	0.03	0.04
HEATING VALUE*	1205	1096	1090
SPECIFIC GRAVITY	0.696	0.737	0.628

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 211 SAMPLE 15351	INDEX 212 SAMPLE 15349	INDEX 213 SAMPLE 15455
STATE	TEXAS	TEXAS	TEXAS
COUNTY	RUSK	RUSK	SAN PATRICIO
FIELD	OAKHILL	RUFUS	MIDWAY S
WELL NAME	G. W. BIRD NO. 1	PRIOR UNIT NO. 1	SHELL A NO. 1
LOCATION	JAMES MCLAIN SUR. A-19	4 MILES E. OF HENDERSON	SAN PAT SCH LAND NO.3,A-235
OWNER	MCCORMICK OIL & GAS CORP.	HINTON PRODUCTION CO.	CITIES SERVICE CO.
COMPLETED	11/18/76	08/05/77	01/29/77
SAMPLED	08/25/78	08/16/78	10/19/78
FORMATION	JURA-COTTON VALLEY	CRET-PETTIT	OLIG-FRIO
GEOLOGIC PROVINCE CODE	260	260	220
DEPTH, FEET	9075	7036	13112
WELLHEAD PRESSURE,PSIG	3200	2300	1375
OPEN FLOW, MCFD	4792	9100	3550
COMPONENT, MOLE PCT			
METHANE	95.3	87.0	89.1
ETHANE	1.6	5.5	5.8
PROPANE	0.3	2.2	2.0
N-BUTANE	0.1	0.8	0.5
ISOBUTANE	0.1	0.5	0.4
N-PENTANE	TRACE	0.3	0.2
ISOPENTANE	TRACE	0.2	0.2
CYCLOPENTANE	TRACE	0.1	0.1
HEXANES PLUS	0.1	0.3	0.2
NITROGEN	0.4	1.9	0.3
OXYGEN	TRACE	0.0	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.1	0.1	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	2.1	1.2	1.2
HELIUM	0.01	0.02	TRACE
HEATING VALUE*	1014	1122	1120
SPECIFIC GRAVITY	0.593	0.662	0.644

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 214 SAMPLE 15406	INDEX 215 SAMPLE 15206	INDEX 216 SAMPLE 15348
STATE	TEXAS	TEXAS	TEXAS
COUNTY	SAN PATRICIO	SAN PATRICIO	SCHLEICHER
FIELD	PORTILLA	TRIPLE A	KAMA
WELL NAME	M. S. WELDER NO 55	OLA MCCANN NO. 1	JEFFERS 18 NO. 1
LOCATION	E. PORTILLA GR. A-25	J. GARCIA SUR. A-129	SEC. 18, BLK. 2, GC&SF SUR.
OWNER	SUPERIOR OIL CO.	C & K PETROLEUM, INC.	MITCHELL ENERGY CORP.
COMPLETED	05/06/76	01/25/76	11/26/76
SAMPLED	10/11/78	01/25/78	08/16/78
FORMATION	OLIG-FRIO	OLIG-FRIO	PENN-CANYON
GEOLOGIC PROVINCE CODE	220	220	430
DEPTH, FEET	7052	9211	7396
WELLHEAD PRESSURE,PSIG	1531	3866	2451
OPEN FLOW, MCFD	8808	4700	7000
COMPONENT, MOLE PCT			
METHANE	90.1	79.8	29.1
ETHANE	4.8	4.2	12.8
PROPANE	2.4	4.2	28.8
N-BUTANE	0.6	1.7	12.0
ISOBUTANE	0.6	2.4	5.2
N-PENTANE	0.2	0.8	2.0
ISOPENTANE	0.3	1.3	2.8
CYCLOPENTANE	TRACE	0.4	0.2
HEXANES PLUS	0.1	1.7	0.8
NITROGEN	0.7	2.5	0.6
OXYGEN	TRACE	0.8	TRACE
ARGON	TRACE	TRACE	0.0
HYDROGEN	0.1	0.0	5.6
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.1	0.2
HELIUM	0.01	0.01	0.05
HEATING VALUE*	1128	1322	2124
SPECIFIC GRAVITY	0.636	0.784	1.262

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 217 SAMPLE 15532	INDEX 218 SAMPLE 15204	INDEX 219 SAMPLE 15399
STATE	TEXAS	TEXAS	TEXAS
COUNTY	SHELBY	STARR	STARR
FIELD	JOAQUIN	ARKANSAS CITY	EL STAGG
WELL NAME	W. M. TAYLOR NO. 1	P. H. LONGORIA NO. 1	RAFAEL A GUERRA NO. 1
LOCATION	S.O. PENNINGTON SUR., A-555	J. WOODRIDGE SUR. 286, A-273	SAN JOSE GRANT, A-78
OWNER	KEY PRODUCTION CO.	HARKINS & CO.	GEORGE H. COATES ESTATE
COMPLETED	10/05/76	06/29/76	09/23/76
SAMPLED	12/06/78	01/24/78	10/--/78
FORMATION	CRET-PETTIT & TRAVIS PEAK	OLIG-FRIO	OLIG-VICKSBURG
GEOLOGIC PROVINCE CODE	260	220	220
DEPTH, FEET	6192	5106	7320
WELLHEAD PRESSURE,PSIG	2763	1546	3575
OPEN FLOW, MCFD	1500	13000	19000
COMPONENT, MOLE PCT			
METHANE	94.0	84.1	88.2
ETHANE	2.0	4.5	5.7
PROPANE	0.4	2.0	2.1
N-BUTANE	0.2	0.7	0.5
ISOBUTANE	0.1	0.8	0.6
N-PENTANE	0.1	0.3	0.2
ISOPENTANE	TRACE	0.3	0.2
CYCLOPENTANE	TRACE	0.1	0.1
HEXANES PLUS	0.1	0.2	0.2
NITROGEN	2.3	5.4	1.3
OXYGEN	0.0	1.3	0.3
ARGON	TRACE	0.1	TRACE
HYDROGEN	TRACE	0.0	TRACE
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.8	0.3	0.7
HELIUM	0.02	TRACE	TRACE
HEATING VALUE*	1018	1075	1118
SPECIFIC GRAVITY	0.595	0.672	0.649

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 220 SAMPLE 15379	INDEX 221 SAMPLE 15292	INDEX 222 SAMPLE 15322
STATE	TEXAS	TEXAS	TEXAS
COUNTY	STARR	UPTON	UPTON
FIELD	RINCON N	AMACKER-TIPPETT S	FULMER
WELL NAME	F. F. MARTINEZ NO. 1	LANE "B" NO. 2	CHRISTY NO. 1
LOCATION	E. RANGEL SUR. 546, A-1015	SEC. 13, BLK. 2, MK&T SUR.	SEC. 36, BLK. B, C&M SUR.
OWNER	HARKINS & CO.	COTTON PETROLEUM CORP.	BELCO PETROLEUM CORP.
COMPLETED	07/07/77	11/17/75	12/01/76
SAMPLED	09/19/78	NOT GIVEN	07/19/78
FORMATION	OLIG-VICKSBURG	DEVO-	PENN-BEND
GEOLOGIC PROVINCE CODE	220	430	430
DEPTH, FEET	7074	11275	10442
WELLHEAD PRESSURE,PSIG	3690	2797	2865
OPEN FLOW, MCFD	5000	2700	6800
COMPONENT, MOLE PCT			
METHANE	81.9	71.6	82.2
ETHANE	7.6	15.9	9.4
PROPANE	3.9	7.3	3.5
N-BUTANE	0.9	2.3	0.8
ISOBUTANE	1.0	0.6	0.5
N-PENTANE	0.2	0.4	0.2
ISOPENTANE	0.3	0.5	0.3
CYCLOPENTANE	TRACE	0.1	0.1
HEXANES PLUS	0.2	0.3	0.2
NITROGEN	3.1	0.6	2.1
OXYGEN	0.7	0.0	0.0
ARGON	TRACE	0.0	0.0
HYDROGEN	0.1	TRACE	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	TRACE	0.4	0.6
HELIUM	TRACE	0.02	0.04
HEATING VALUE*	1163	1355	1171
SPECIFIC GRAVITY	0.690	0.783	0.686

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 223 SAMPLE 15323	INDEX 224 SAMPLE 15342	INDEX 225 SAMPLE 15298
STATE	TEXAS	TEXAS	TEXAS
COUNTY	WARD	WARD	WARD
FIELD	BLOCK 17	PHANTOM	SODA LAKE
WELL NAME	UNIVERSITY "34" NO. 1	LEE "128" NO. 1	T. B. PRUETT NO. 1
LOCATION	SEC. 34, BLK. 17, UNIV. LDS.	SEC. 128, BLK. 34, H&TC SUR.	SEC. 23, BLK. 1, W&NW RR CO.
OWNER	HNG OIL CO.	HNG OIL CO.	GULF OIL EXPL. & PROD. CO.
COMPLETED	06/21/77	05/19/78	02/07/77
SAMPLED	08/04/78	08/04/78	06/02/78
FORMATION	PERM-CHERRY CANYON	PENN-ATOKA	SILU-FUSSELMAN
GEOLOGIC PROVINCE CODE	430	430	430
DEPTH, FEET	6089	14933	19100
WELLHEAD PRESSURE,PSIG	2525	5200	6040
OPEN FLOW, MCFD	5200	7700	46800
COMPONENT, MOLE PCT			
METHANE	86.2	95.7	94.1
ETHANE	5.3	2.3	0.3
PROPANE	2.5	0.4	TRACE
N-BUTANE	0.9	0.1	TRACE
ISOBUTANE	0.6	TRACE	TRACE
N-PENTANE	0.3	TRACE	TRACE
ISOPENTANE	0.5	TRACE	TRACE
CYCLOPENTANE	0.1	TRACE	TRACE
HEXANES PLUS	0.3	0.1	0.1
NITROGEN	3.3	0.7	0.6
OXYGEN	0.0	0.0	TRACE
ARGON	0.0	TRACE	TRACE
HYDROGEN	0.1	TRACE	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.4
CARBON DIOXIDE	0.0	0.5	4.4
HELIUM	0.03	0.01	0.02
HEATING VALUE*	1137	1030	966
SPECIFIC GRAVITY	0.667	0.580	0.606

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 226 SAMPLE 15352	INDEX 227 SAMPLE 15444	INDEX 228 SAMPLE 15288
STATE	TEXAS	TEXAS	TEXAS
COUNTY	WARD	WEBB	WEBB
FIELD	WARWINK	AVIATORS S	UMBRELLA
WELL NAME	UNIVERSITY 9-18 NO. 2	BRUNI-LOPEZ UNIT NO. 1	FEE 1-P-25
LOCATION	SEC. 9,BLK.18,UNIV. LD. SUR.	J.T. WRIGHT SUR. 309,A-1908	3 MI. NE LAREDO
OWNER	GETTY OIL CO.	KILLAM & HURD, LTD.	KILLAM & HURD, LTD.
COMPLETED	08/05/76	06/08/77	10/13/76
SAMPLED	08/25/78	10/17/78	05/24/78
FORMATION	PENN-ATOKA	TERT-WILCOX	EOCE-WILCOX
GEOLOGIC PROVINCE CODE	430	220	220
DEPTH, FEET	13839	10600	7150
WELLHEAD PRESSURE,PSIG	2750	7200	2900
OPEN FLOW, MCFD	4000	5600	2800
COMPONENT, MOLE PCT			
METHANE	94.2	84.0	92.0
ETHANE	3.5	7.3	4.5
PROPANE	0.8	2.3	1.4
N-BUTANE	0.2	0.4	0.4
ISOBUTANE	0.1	0.6	0.2
N-PENTANE	TRACE	0.2	0.1
ISOPENTANE	0.1	0.2	0.2
CYCLOPENTANE	TRACE	0.1	TRACE
HEXANES PLUS	0.1	0.3	0.1
NITROGEN	0.4	0.2	0.3
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	0.0	TRACE
HYDROGEN	0.1	0.1	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.6	4.4	0.8
HELIUM	0.01	TRACE	0.01
HEATING VALUE*	1058	1112	1087
SPECIFIC GRAVITY	0.596	0.689	0.617

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 229 SAMPLE 15389	INDEX 230 SAMPLE 15267	INDEX 231 SAMPLE 15390
STATE	TEXAS	TEXAS	TEXAS
COUNTY	WHARTON	WHARTON	WHARTON
FIELD	BLUE BASIN	HUNGERFORD E	PIERCE RANCH
WELL NAME	G. A. DUFFY "B" NO. 3	CARL HOSMAN NO. 1	PIERCE ESTATE NO. E-9
LOCATION	SOUTH OF PIERCE	I&GN RR SUR. A-285	IRR SUR. 11, A-447
OWNER	TEXACO INC.	CADDO OIL CO.	TEXACO INC.
COMPLETED	02/21/76	09/18/76	12/07/76
SAMPLED	09/29/78	04/19/78	09/29/78
FORMATION	OLIG-FRIO	MIOC-	OLIG-FRIO
GEOLOGIC PROVINCE CODE	220	220	220
DEPTH, FEET	4522	3165	6150
WELLHEAD PRESSURE,PSIG	1795	1057	2230
OPEN FLOW, MCFD	109000	7002	24500
COMPONENT, MOLE PCT			
METHANE	96.4	98.3	79.5
ETHANE	0.2	0.1	4.1
PROPANE	0.0	0.1	0.7
N-BUTANE	0.1	0.0	0.2
ISOBUTANE	0.0	0.0	0.1
N-PENTANE	TRACE	0.0	0.0
ISOPENTANE	TRACE	0.0	0.1
CYCLOPENTANE	TRACE	0.0	0.1
HEXANES PLUS	0.1	0.0	0.2
NITROGEN	2.5	1.1	10.8
OXYGEN	0.4	TRACE	2.5
ARGON	TRACE	TRACE	0.1
HYDROGEN	0.1	0.0	TRACE
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.4	1.5
HELIUM	0.01	0.01	TRACE
HEATING VALUE*	989	1000	925
SPECIFIC GRAVITY	0.572	0.564	0.668

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 232 SAMPLE 15397	INDEX 233 SAMPLE 15287	INDEX 234 SAMPLE 15225
STATE	TEXAS	TEXAS	TEXAS
COUNTY	WHARTON	WHEELER	WHEELER
FIELD	PIERCE RANCH	FARRIS	LOTT RANCH
WELL NAME	PIERCE ESTATE NO. E-9	BEN TROUT NO. 2	LOTT NO. 1-2
LOCATION	IRR SUR. 11, A-447	SEC. 17, BLK. A-4, H&GN SUR.	SEC. 2, BLK. E, E.J. CAMPBEL
OWNER	TEXACO INC.	GETTY OIL CO.	CIG EXPLORATION, INC.
COMPLETED	07/20/77	03/28/78	01/26/78
SAMPLED	10/04/78	05/26/78	03/13/78
FORMATION	OLIG-FRIO	DEVO-HUNTON	PENN-MORROW
GEOLOGIC PROVINCE CODE	220	360	360
DEPTH, FEET	4906	16315	15072
WELLHEAD PRESSURE,PSIG	2045	4810	6983
OPEN FLOW, MCFD	2900	7312	8800
COMPONENT, MOLE PCT			
METHANE	92.8	95.3	96.7
ETHANE	2.1	2.2	0.9
PROPANE	0.5	0.5	0.1
N-BUTANE	0.1	0.3	0.0
ISOBUTANE	TRACE	TRACE	0.0
N-PENTANE	TRACE	0.1	0.0
ISOPENTANE	0.1	0.1	0.0
CYCLOPENTANE	0.1	TRACE	0.0
HEXANES PLUS	0.3	0.1	0.0
NITROGEN	1.8	0.8	0.4
OXYGEN	0.3	TRACE	TRACE
ARGON	TRACE	TRACE	TRACE
HYDROGEN	TRACE	0.0	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.8	0.4	1.8
HELIUM	TRACE	0.02	0.02
HEATING VALUE*	1017	1042	998
SPECIFIC GRAVITY	0.608	0.587	0.578

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 235 SAMPLE 15226	INDEX 236 SAMPLE 15262	INDEX 237 SAMPLE 15356
STATE	TEXAS	TEXAS	TEXAS
COUNTY	WHEELER	WHEELER	WINKLER
FIELD	LOTT RANCH	MOBEETIE S	LITTLE JOE
WELL NAME	LOTT NO. 1	BILL WATERS NO. 1	UNIVERSITY 41-21 NO. 1
LOCATION	SEC. 15, CAMP CO. SCHOOL LND	SEC. 34, BLK A-9, H&GN SUR.	SEC. 41, BLK. 21, UL SUR.
OWNER	CIG EXPLORATION, INC.	COBRA OIL & GAS CORP.	GETTY OIL CO.
COMPLETED	11/04/77	11/23/77	12/02/77
SAMPLED	03/13/78	04/25/78	08/31/78
FORMATION	PENN-MORROW	DEVO-HUNTON	ORDO-ELLENBURGER
GEOLOGIC PROVINCE CODE	360	360	430
DEPTH, FEET	14854	12030	19758
WELLHEAD PRESSURE,PSIG	6933	2500	1450
OPEN FLOW, MCFD	2900	1100	5310
COMPONENT, MOLE PCT			
METHANE	96.1	92.8	96.8
ETHANE	1.0	3.9	1.0
PROPANE	0.1	1.3	0.2
N-BUTANE	TRACE	0.4	0.2
ISOBUTANE	0.0	0.1	TRACE
N-PENTANE	0.1	0.1	0.1
ISOPENTANE	0.1	0.2	0.1
CYCLOPENTANE	TRACE	0.1	TRACE
HEXANES PLUS	TRACE	0.1	0.1
NITROGEN	0.8	0.7	0.4
OXYGEN	0.1	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.0	0.0	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.7	0.1	1.0
HELIUM	0.02	0.03	0.02
HEATING VALUE*	1003	1082	1024
SPECIFIC GRAVITY	0.585	0.607	0.582

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 238 SAMPLE 15192	INDEX 239 SAMPLE 15193	INDEX 240 SAMPLE 15202
STATE	TEXAS	TEXAS	TEXAS
COUNTY	ZAPATA	ZAPATA	ZAPATA
FIELD	DYE	DYE	J. C. MARTIN
WELL NAME	J. D. DYE NO. 1	J. D. DYE NO. 2	E. T. MARTINEZ NO. 1
LOCATION	J.V. BOREGO GRANT, A-209	J.V. BOREGO GRANT, A-209	J. A. TRAVINO PORC 56, A-97
OWNER	GAS PRODUCING ENTERPRISES	GAS PRODUCING ENTERPRISES	GULF OIL & MINERALS CO.
COMPLETED	01/10/76	04/11/76	07/03/76
SAMPLED	01/06/78	01/06/78	01/30/78
FORMATION	EOCE-WILCOX	CRET-NAVARRO	EOCE-WILCOX
GEOLOGIC PROVINCE CODE	220	220	220
DEPTH, FEET	8200	9400	7754
WELLHEAD PRESSURE,PSIG	3678	1704	4780
OPEN FLOW, MCFD	18000	1850	110000
COMPONENT, MOLE PCT			
METHANE	90.5	95.6	94.4
ETHANE	5.2	2.3	3.2
PROPANE	1.2	0.3	0.6
N-BUTANE	0.3	0.1	0.2
ISOBUTANE	0.3	0.1	0.1
N-PENTANE	0.1	TRACE	0.1
ISOPENTANE	0.1	TRACE	0.1
CYCLOPENTANE	0.1	TRACE	TRACE
HEXANES PLUS	0.2	TRACE	0.1
NITROGEN	0.5	0.2	0.2
OXYGEN	0.1	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	TRACE	TRACE	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.5	1.4	1.0
HELIUM	TRACE	TRACE	TRACE
HEATING VALUE*	1084	1024	1053
SPECIFIC GRAVITY	0.630	0.586	0.598

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 241 SAMPLE 15460	INDEX 242 SAMPLE 15235	INDEX 243 SAMPLE 15189
STATE	TEXAS	TEXAS	TEXAS
COUNTY	ZAPATA	ZAPATA	ZAPATA
FIELD	LAREDO	MIRANDO VALLEY N	ROLETA
WELL NAME	C. L. MCCANN NO. 1	HINNANT-FULBRIGHT "J" NO. 1	GUERRA L NO. 1
LOCATION	J.V. BORREGO GNT. A-209	J. H. HINNANT SUR. NO. 613	R. VELA PORCIAN 26, A-102
OWNER	CHEVRON U.S.A.,INC.	HUGHES & HUGHES OIL & GAS	TEXAS OIL & GAS CORP.
COMPLETED	04/19/77	05/27/77	06/18/76
SAMPLED	10/26/78	03/20/78	01/--/78
FORMATION	EOCE-WILCOX	EOCE-CLAIBORNE	EOCE-WILCOX
GEOLOGIC PROVINCE CODE	220	220	220
DEPTH, FEET	7898	5551	8146
WELLHEAD PRESSURE,PSIG	4637	2007	4600
OPEN FLOW, MCFD	10500	6200	5000
COMPONENT, MOLE PCT			
METHANE	92.0	90.6	92.3
ETHANE	4.2	4.6	4.6
PROPANE	1.1	1.7	1.1
N-BUTANE	0.2	0.4	0.2
ISOBUTANE	0.2	0.3	0.2
N-PENTANE	0.1	0.1	0.1
ISOPENTANE	0.1	0.3	0.1
CYCLOPENTANE	0.1	TRACE	TRACE
HEXANES PLUS	0.1	0.1	0.1
NITROGEN	0.2	0.9	0.2
OXYGEN	0.0	0.1	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.1	0.0	TRACE
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.4	0.8	1.1
HELIUM	TRACE	0.01	TRACE
HEATING VALUE*	1067	1090	1073
SPECIFIC GRAVITY	0.613	0.626	0.612

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 244 SAMPLE 15439	INDEX 245 SAMPLE 15443	INDEX 246 SAMPLE 15437
STATE	TEXAS	TEXAS	TEXAS
COUNTY	ZAPATA	ZAPATA	ZAVALA
FIELD	ROLETA	UREBENO	PRYOR RANCH N
WELL NAME	GUERRA "M" NO. 1	M. M. ALEXANDER NO. B-2	IKE T. PRYOR NO. C-1
LOCATION	5 MI. NW LOPENO	M. CUELLAR PORCION 1, A-127	ANTONIO AGUIRRE SUR. A-1
OWNER	TEXAS OIL & GAS CORP.	GULF OIL EXPL. & PROD. CO.	HUGHES & HUGHES OIL & GAS
COMPLETED	02/09/77	06/25/77	06/24/77
SAMPLED	10/18/78	10/17/78	10/17/78
FORMATION	EOCE-WILCOX	-LOBO	CRET-OLMUS
GEOLOGIC PROVINCE CODE	220	220	220
DEPTH, FEET	8172	7853	2288
WELLHEAD PRESSURE,PSIG	1100	3170	907
OPEN FLOW, MCFD	4000	940	3200
COMPONENT, MOLE PCT			
METHANE	92.1	96.0	97.7
ETHANE	4.3	1.7	0.1
PROPANE	1.2	0.3	TRACE
N-BUTANE	0.2	0.1	0.0
ISOBUTANE	0.2	0.0	0.0
N-PENTANE	0.1	TRACE	0.0
ISOPENTANE	0.1	TRACE	0.0
CYCLOPENTANE	0.1	TRACE	0.0
HEXANES PLUS	0.2	0.1	0.0
NITROGEN	0.3	0.2	2.0
OXYGEN	0.0	TRACE	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.1	TRACE	TRACE
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	1.1	1.5	0.1
HELIUM	TRACE	TRACE	0.02
HEATING VALUE*	1077	1019	991
SPECIFIC GRAVITY	0.616	0.585	0.564

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 247 SAMPLE 15436	INDEX 248 SAMPLE 15315	INDEX 249 SAMPLE 15528
STATE	TEXAS	UTAH	WEST VIRGINIA
COUNTY	ZAVALA	UINTAH	WIRT
FIELD	PRYOR RANCH S	NATURAL BUTTES	PEE WEE
WELL NAME	H&F PROPERTIES NO. B-1	FLAT MESA NO. 1	B. N. WISEMAN NO. 1
LOCATION	SEC. 22, N. AGUIRRE SUR. A-3	SEC. 7, T10S, R23E	TUCKER DISTRICT
OWNER	HUGHES & HUGHES OIL & GAS	ENSERCH EXPLORATION, INC.	RAY RESOURCES
COMPLETED	04/05/77	05/31/78	01/06/77
SAMPLED	10/17/78	07/12/78	11/20/78
FORMATION	CRET-ELAINE	CRET-MESAVERDE	MISS-BEREA
GEOLOGIC PROVINCE CODE	220	575	160
DEPTH, FEET	3480	6954	1641
WELLHEAD PRESSURE,PSIG	1410	2150	750
OPEN FLOW, MCFD	9800	2200	6500
COMPONENT, MOLE PCT			
METHANE	97.6	93.5	85.8
ETHANE	0.8	3.6	2.6
PROPANE	0.4	1.1	0.9
N-BUTANE	TRACE	0.3	0.3
ISOBUTANE	0.0	0.2	0.1
N-PENTANE	TRACE	0.1	0.1
ISOPENTANE	0.0	0.2	0.1
CYCLOPENTANE	TRACE	0.1	TRACE
HEXANES PLUS	0.1	0.2	0.1
NITROGEN	0.8	0.3	8.7
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	0.0	TRACE
HYDROGEN	0.1	0.1	0.3
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.2	0.2	0.1
HELIUM	0.02	0.01	0.95
HEATING VALUE*	1019	1084	967
SPECIFIC GRAVITY	0.570	0.605	0.615

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 250 SAMPLE 15213	INDEX 251 SAMPLE 15313	INDEX 252 SAMPLE 15270
STATE	WYOMING	WYOMING	WYOMING
COUNTY	CAMPBELL	CARBON	CARBON
FIELD	KUEHNE SE	COAL GULCH	CRESTON UNIT
WELL NAME	KUEHNE RANCH UNIT NO. 8	CHAMPLIN 444 AMOCO A NO. 1	CRESTON III NO. 3
LOCATION	SEC. 20, T54N, R69W	SEC. 17, T17N, R93W	SEC. 5, T18N, R91W
OWNER	DAVIS OIL CO.	AMOCO PRODUCTION CO.	AMOCO PRODUCTION CO.
COMPLETED	NOT GIVEN	03/15/78	11/06/77
SAMPLED	02/--/78	06/27/78	04/07/78
FORMATION	NOT GIVEN	CRET-ALMOND	CRET-ERICSON
GEOLOGIC PROVINCE CODE	515	535	535
DEPTH, FEET	NOT GIVEN	9168	8253
WELLHEAD PRESSURE,PSIG	NOT GIVEN	3950	3000
OPEN FLOW, MCFD	NOT GIVEN	2460	2979
COMPONENT, MOLE PCT			
METHANE	21.0	82.4	84.9
ETHANE	3.5	7.9	6.6
PROPANE	1.8	3.3	2.5
N-BUTANE	1.0	0.8	0.7
ISOBUTANE	0.7	0.7	0.7
N-PENTANE	0.6	0.2	0.3
ISOPENTANE	0.4	0.4	0.5
CYCLOPENTANE	0.2	0.2	0.1
HEXANES PLUS	0.6	0.4	0.5
NITROGEN	56.4	1.2	0.3
OXYGEN	0.0	TRACE	0.0
ARGON	0.3	TRACE	0.0
HYDROGEN	TRACE	0.1	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	12.7	2.4	2.9
HELIUM	0.80	TRACE	0.01
HEATING VALUE*	460	1166	1154
SPECIFIC GRAVITY	1.009	0.702	0.692

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 253 SAMPLE 15281	INDEX 254 SAMPLE 15398	INDEX 255 SAMPLE 15284
STATE	WYOMING	WYOMING	WYOMING
COUNTY	CARBON	CARBON	FREMONT
FIELD	HORSESHOE RIDGE	WAMSUTTER	MADDEN DEEP
WELL NAME	HORSESHOE RIDGE UNIT NO. 2	ECHO SPRINGS NO. 1-2	CHEVRON NO. 1-1
LOCATION	SEC. 1, T24N, R83W	SEC. 2, T19N, R93W	SEC. 1, T38N, R91W
OWNER	ENERGY RESERVES GROUP, INC.	MARATHON OIL CO.	MONSANTO CO.
COMPLETED	03/06/78	NOT GIVEN	12/10/77
SAMPLED	05/10/78	10/06/78	05/25/78
FORMATION	CRET-HATFIELD	NOT GIVEN	CRET-MESAVERDE
GEOLOGIC PROVINCE CODE	535	535	530
DEPTH, FEET	2932	NOT GIVEN	14709
WELLHEAD PRESSURE,PSIG	1081	3900	8025
OPEN FLOW, MCFD	4588	NOT GIVEN	12400
COMPONENT, MOLE PCT			
METHANE	99.5	80.3	94.2
ETHANE	0.1	7.0	0.2
PROPANE	0.1	3.8	TRACE
N-BUTANE	0.0	1.2	0.0
ISOBUTANE	0.0	1.3	0.0
N-PENTANE	0.0	0.5	0.0
ISOPENTANE	0.0	0.7	0.0
CYCLOPENTANE	0.0	0.2	0.0
HEXANES PLUS	0.0	0.6	0.0
NITROGEN	0.3	0.3	0.3
OXYGEN	0.0	TRACE	TRACE
ARGON	0.0	0.0	TRACE
HYDROGEN	0.0	TRACE	TRACE
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	4.0	5.1
HELIUM	0.01	TRACE	TRACE
HEATING VALUE*	1012	1211	958
SPECIFIC GRAVITY	0.559	0.746	0.605

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 256 SAMPLE 15457	INDEX 257 SAMPLE 15465	INDEX 258 SAMPLE 15343
STATE	WYOMING	WYOMING	WYOMING
COUNTY	LINCOLN	PARK	SUBLETTE
FIELD	BRUFF AREA	WILDCAT	TIP TOP
WELL NAME	STATE LAND NO. 36-1	SELLER DRAW UNIT NO. 1	TIP TOP UNIT NO. F 44-7G
LOCATION	SEC. 36, T19N, R113W	SEC. 21, T48N, R98W	SEC. 7, T28N, R113W
OWNER	MOUNTAIN FUEL SUPPLY CO.	AMERICAN QUASAR PET. CO.	MOBIL OIL CORP.
COMPLETED	02/11/78	NOT GIVEN	06/10/78
SAMPLED	10/24/78	10/26/78	08/10/78
FORMATION	CRET-FRONTIER	CRET-MUDDY	CRET-FRONTIER
GEOLOGIC PROVINCE CODE	535	520	535
DEPTH, FEET	11367	19580	6372
WELLHEAD PRESSURE,PSIG	3700	10280	2640
OPEN FLOW, MCFD	2674	NOT GIVEN	9707
COMPONENT, MOLE PCT			
METHANE	71.5	93.5	77.3
ETHANE	11.2	1.9	7.5
PROPANE	4.1	0.2	5.7
N-BUTANE	0.7	0.1	3.4
ISOBUTANE	0.6	TRACE	2.0
N-PENTANE	0.2	TRACE	0.7
ISOPENTANE	0.3	TRACE	1.6
CYCLOPENTANE	0.1	TRACE	0.2
HEXANES PLUS	0.2	0.1	0.5
NITROGEN	8.5	2.0	1.0
OXYGEN	2.0	0.4	TRACE
ARGON	0.1	TRACE	0.0
HYDROGEN	0.1	TRACE	TRACE
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.5	1.6	TRACE
HELIUM	0.01	0.01	0.01
HEATING VALUE*	1111	995	1379
SPECIFIC GRAVITY	0.739	0.595	0.795

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 259 SAMPLE 15205	INDEX 260 SAMPLE 15195	INDEX 261 SAMPLE 15187
STATE	WYOMING	WYOMING	WYOMING
COUNTY	SWEETWATER	SWEETWATER	SWEETWATER
FIELD	LINCOLN ROAD UNIT	RED LAKES	TABLE ROCK
WELL NAME	LINCOLN ROAD UNIT NO. 1	CHAMPLIN 337 AMOCO A NO. 1	TABLE ROCK UNIT NO. 22
LOCATION	SEC. 9, T24N, R111W	SEC. 5, T18N, R94W	SEC. 2, T18N, R98W
OWNER	C & K PETROLEUM, INC.	AMOCO PRODUCTION CO.	TEXACO INC.
COMPLETED	03/03/77	10/14/77	11/01/77
SAMPLED	02/06/78	01/10/78	01/10/78
FORMATION	CRET-FRONTIER	CRET-ALMOND	MISS-MADISON
GEOLOGIC PROVINCE CODE	535	535	535
DEPTH, FEET	9681	9734	18116
WELLHEAD PRESSURE,PSIG	3614	3275	NOT GIVEN
OPEN FLOW, MCFD	NOT GIVEN	2130	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	90.6	80.6	74.0
ETHANE	6.2	9.4	2.1
PROPANE	1.4	3.9	0.5
N-BUTANE	0.3	0.8	0.2
ISOBUTANE	0.2	0.7	0.1
N-PENTANE	0.1	0.2	0.1
ISOPENTANE	0.1	0.3	TRACE
CYCLOPENTANE	TRACE	TRACE	TRACE
HEXANES PLUS	0.1	0.1	0.1
NITROGEN	0.6	0.5	4.6
OXYGEN	0.0	TRACE	0.1
ARGON	TRACE	TRACE	0.1
HYDROGEN	0.0	TRACE	TRACE
HYDROGEN SULFIDE**	0.0	0.0	1.4
CARBON DIOXIDE	0.5	3.3	16.5
HELIUM	0.01	0.01	0.30
HEATING VALUE*	1096	1163	829
SPECIFIC GRAVITY	0.621	0.708	0.768

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 1. - SAMPLES FROM GAS AND OIL WELLS IN THE UNITED STATES

	INDEX 262 SAMPLE 15196
STATE	WYOMING
COUNTY	UINTA
FIELD	WHITNEY CANYON
WELL NAME	AMOCO-CHEVRON-GULF W1 NO. 1
LOCATION	SEC. 18, T17N, R119W
OWNER	AMOCO PRODUCTION CO.
COMPLETED	08/22/77
SAMPLED	01/11/78
FORMATION	TRIA-THAYNES
GEOLOGIC PROVINCE CODE	535
DEPTH, FEET	9178
WELLHEAD PRESSURE,PSIG	2850
OPEN FLOW, MCFD	4700
COMPONENT, MOLE PCT	
METHANE	82.5
ETHANE	6.5
PROPANE	2.2
N-BUTANE	0.7
ISOBUTANE	0.5
N-PENTANE	0.2
ISOPENTANE	0.3
CYCLOPENTANE	0.1
HEXANES PLUS	0.2
NITROGEN	6.5
OXYGEN	TRACE
ARGON	TRACE
HYDROGEN	0.0
HYDROGEN SULFIDE**	0.0
CARBON DIOXIDE	0.1
HELIUM	0.07
HEATING VALUE*	1085
SPECIFIC GRAVITY	0.670

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 1 SAMPLE 15433	INDEX 2 SAMPLE 15491	INDEX 3 SAMPLE 15488
STATE	COLORADO	KANSAS	KANSAS
COUNTY	CHEYENNE	DICKINSON	ELLSWORTH
FIELD	COMPOSITE	PANHANDLE W ET AL	NOT GIVEN
LOCATION	20 IN. DISCHARGE	24 IN.	24-26-36 INCH
OWNER	COLORADO INTERSTATE GAS CO.	MICHIGAN-WISCONSIN P.L. CO.	NATURAL GAS PL CO. OF AM.
SAMPLED	10/19/78	11/17/78	11/16/78
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	450	360	385
PRESSURE,PSIG	725	700	580
FLOW,MCFD	50000	590000	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	85.4	91.0	85.3
ETHANE	10.2	3.1	3.6
PROPANE	1.0	0.8	1.2
N-BUTANE	0.0	0.1	0.3
ISOBUTANE	0.0	TRACE	0.1
N-PENTANE	0.0	0.1	0.1
ISOPENTANE	0.0	TRACE	0.1
CYCLOPENTANE	0.0	TRACE	0.1
HEXANES PLUS	0.0	TRACE	0.1
NITROGEN	0.9	4.2	7.2
OXYGEN	0.0	0.0	1.0
ARGON	TRACE	TRACE	0.1
HYDROGEN	0.1	0.1	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	2.5	0.6	0.6
HELIUM	0.02	0.08	0.15
HEATING VALUE*	1074	1006	991
SPECIFIC GRAVITY	0.643	0.604	0.639

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 4 SAMPLE 15501	INDEX 5 SAMPLE 15432	INDEX 6 SAMPLE 15430
STATE	KANSAS	KANSAS	KANSAS
COUNTY	FINNEY	KEARNY	MORTON
FIELD	HUGOTON	HUGOTON	GREENWOOD GAS AREA
LOCATION	20 IN. DISCHARGE	20 IN. DISCHARGE	24 IN. INLET
OWNER	NORTHERN NATURAL GAS CO.	COLORADO INTERSTATE GAS CO.	COLORADO INTERSTATE GAS CO.
SAMPLED	11/14/78	10/18/78	10/18/78
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	360	360	360
PRESSURE,PSIG	798	739	238
FLOW,MCFD	200000	36500	33800
COMPONENT, MOLE PCT			
METHANE	72.1	71.0	70.4
ETHANE	6.2	6.2	7.6
PROPANE	3.6	3.3	4.1
N-BUTANE	1.0	0.8	0.3
ISOBUTANE	0.4	0.3	0.1
N-PENTANE	0.2	0.1	TRACE
ISOPENTANE	0.2	0.1	TRACE
CYCLOPENTANE	0.1	TRACE	TRACE
HEXANES PLUS	0.2	0.1	TRACE
NITROGEN	15.5	17.6	17.2
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	TRACE	0.1
HYDROGEN	0.1	0.1	TRACE
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	TRACE	TRACE	TRACE
HELIUM	0.42	0.46	0.01
HEATING VALUE*	1014	967	969
SPECIFIC GRAVITY	0.719	0.712	0.710

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 7 SAMPLE 15431	INDEX 8 SAMPLE 15429	INDEX 9 SAMPLE 15507
STATE	KANSAS	KANSAS	KANSAS
COUNTY	MORTON	MORTON	RICE
FIELD	GREENWOOD GAS AREA	MOCANE LAVERNE	ANADARKO BASIN
LOCATION	12 IN. INLET	20 IN. INLET	26 IN. "C" FROM ANADRKO
OWNER	PHILLIPS PETROLEUM CO.	COLORADO INTERSTATE GAS CO.	NORTHERN NATURAL GAS CO.
SAMPLED	10/18/78	10/18/78	11/16/78
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	360	360	385
PRESSURE,PSIG	238	674	580
FLOW,MCFD	43800	19300	400000
COMPONENT, MOLE PCT			
METHANE	63.6	90.0	84.2
ETHANE	6.7	5.1	5.8
PROPANE	4.5	0.4	2.6
N-BUTANE	1.4	0.1	0.7
ISOBUTANE	0.6	0.0	0.3
N-PENTANE	0.4	TRACE	0.2
ISOPENTANE	0.4	0.0	0.2
CYCLOPENTANE	0.1	TRACE	0.1
HEXANES PLUS	0.3	0.1	0.2
NITROGEN	21.2	3.7	5.0
OXYGEN	0.0	TRACE	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.1	0.0	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.3	0.3
HELIUM	0.57	0.20	0.20
HEATING VALUE*	1002	1022	1089
SPECIFIC GRAVITY	0.773	0.604	0.660

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 10 SAMPLE 15508	INDEX 11 SAMPLE 15506	INDEX 12 SAMPLE 15504
STATE	KANSAS	KANSAS	KANSAS
COUNTY	RICE	RICE	RICE
FIELD	BEAVER	BURDETT	HUGOTON
LOCATION	30 IN. "D" FROM BEAVER	20 IN. "B" FROM BURDETT	26 IN. "A" FROM SUBLETTE
OWNER	NORTHERN NATURAL GAS CO.	NORTHERN NATURAL GAS CO.	NORTHERN NATURAL GAS CO.
SAMPLED	11/16/78	11/16/78	11/16/78
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	385	385	385
PRESSURE,PSIG	650	550	350
FLOW,MCFD	950	220000	170000
COMPONENT, MOLE PCT			
METHANE	90.1	71.4	75.4
ETHANE	3.7	6.2	6.1
PROPANE	0.9	3.5	3.3
N-BUTANE	0.2	1.0	0.9
ISOBUTANE	0.1	0.4	0.4
N-PENTANE	0.1	0.2	0.2
ISOPENTANE	0.0	0.2	0.2
CYCLOPENTANE	0.1	0.1	0.1
HEXANES PLUS	0.2	0.2	0.2
NITROGEN	4.0	16.3	12.6
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.1	0.1	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.5	TRACE	TRACE
HELIUM	0.16	0.44	0.40
HEATING VALUE*	1031	1004	1034
SPECIFIC GRAVITY	0.616	0.721	0.701

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 13 SAMPLE 15505	INDEX 14 SAMPLE 15509	INDEX 15 SAMPLE 15510
STATE	KANSAS	KANSAS	KANSAS
COUNTY	RICE	RICE	RICE
FIELD	MACKSVILLE	NOT GIVEN	NOT GIVEN
LOCATION	24 IN. "B" FROM MACKSVILLE	A-26 IN. DISCHARGE	B-24 IN. DISCHARGE
OWNER	NORTHERN NATURAL GAS CO.	NORTHERN NATURAL GAS CO.	NORTHERN NATURAL GAS CO.
SAMPLED	11/16/78	11/16/78	11/16/78
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	385	385	385
PRESSURE,PSIG	350	520	650
FLOW,MCFD	130000	150000	195000
COMPONENT, MOLE PCT			
METHANE	75.7	87.5	86.3
ETHANE	6.0	5.2	4.8
PROPANE	3.2	0.4	0.7
N-BUTANE	0.9	0.1	0.2
ISOBUTANE	0.4	TRACE	0.1
N-PENTANE	0.2	TRACE	TRACE
ISOPENTANE	0.2	0.0	TRACE
CYCLOPENTANE	0.1	TRACE	TRACE
HEXANES PLUS	0.2	0.1	0.1
NITROGEN	12.6	6.1	7.1
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	TRACE	0.1	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.3	0.3
HELIUM	0.39	0.19	0.16
HEATING VALUE*	1032	999	994
SPECIFIC GRAVITY	0.702	0.615	0.623

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 16 SAMPLE 15511	INDEX 17 SAMPLE 15512	INDEX 18 SAMPLE 15513
STATE	KANSAS	KANSAS	KANSAS
COUNTY	RICE	RICE	RICE
FIELD	NOT GIVEN	NOT GIVEN	NOT GIVEN
LOCATION	C-26 IN. DISCHARGE	D-30 IN. DISCHARGE	E-30 IN. DISCHARGE
OWNER	NORTHERN NATURAL GAS CO.	NORTHERN NATURAL GAS CO.	NORTHERN NATURAL GAS CO.
SAMPLED	11/16/78	11/16/78	11/16/78
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	385	385	385
PRESSURE,PSIG	800	860	940
FLOW,MCFD	285000	520000	650000
COMPONENT, MOLE PCT			
METHANE	86.7	87.5	89.3
ETHANE	4.5	3.5	3.4
PROPANE	0.7	0.6	0.8
N-BUTANE	0.2	0.2	0.2
ISOBUTANE	TRACE	0.1	TRACE
N-PENTANE	0.1	TRACE	TRACE
ISOPENTANE	TRACE	TRACE	TRACE
CYCLOPENTANE	TRACE	TRACE	0.1
HEXANES PLUS	0.1	0.1	TRACE
NITROGEN	7.2	7.4	5.5
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	TRACE	0.1	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.3	0.3	0.5
HELIUM	0.15	0.12	0.13
HEATING VALUE*	993	980	997
SPECIFIC GRAVITY	0.623	0.617	0.611

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 19 SAMPLE 15487	INDEX 20 SAMPLE 15496	INDEX 21 SAMPLE 15492
STATE	KANSAS	KANSAS	KANSAS
COUNTY	RUSH	SCOTT	SCOTT
FIELD	CENTRAL KANSAS	BRADSHAW	HUGOTON
LOCATION	8 IN. DISCHARGE	SYRACUSE 10 IN. INLET	DEERFIELD 12 IN. INLET
OWNER	KANSAS-NEBRASKA NAT. GAS CO.	KANSAS-NEBRASKA NAT. GAS CO.	KANSAS-NEBRASKA NAT. GAS CO.
SAMPLED	11/15/78	11/15/78	11/15/78
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	385	360	360
PRESSURE,PSIG	335	365	365
FLOW,MCFD	18000	12000	18350
COMPONENT, MOLE PCT			
METHANE	79.0	57.0	72.4
ETHANE	3.7	5.2	6.3
PROPANE	1.5	3.7	3.6
N-BUTANE	0.5	1.2	0.9
ISOBUTANE	0.3	0.5	0.4
N-PENTANE	0.2	0.4	0.2
ISOPENTANE	0.1	0.3	0.2
CYCLOPENTANE	0.1	0.1	TRACE
HEXANES PLUS	0.3	0.3	0.1
NITROGEN	13.0	30.6	15.4
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	0.1	TRACE
HYDROGEN	0.1	TRACE	0.0
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.0	0.0	TRACE
HELIUM	1.15	0.69	0.42
HEATING VALUE*	965	873	1006
SPECIFIC GRAVITY	0.663	0.791	0.713

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 22 SAMPLE 15497	INDEX 23 SAMPLE 15498	INDEX 24 SAMPLE 15490
STATE	KANSAS	KANSAS	KANSAS
COUNTY	SCOTT	SCOTT	SCOTT
FIELD	HUGOTON	HUGOTON	HUGOTON & BRADSHAW
LOCATION	HOLCOMB 12 IN. INLET	LAKIN 12 IN. I 'LET	20 IN. DISCHARGE
OWNER	KANSAS-NEBRASKA NAT. GAS CO.	KANSAS-NEBRASKA NAT. GAS CO.	KANSAS-NEBRASKA NAT. GAS CO.
SAMPLED	11/15/78	11/15/78	11/15/78
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	360	360	360
PRESSURE,PSIG	365	365	320
FLOW,MCFD	67300	121300	215500
COMPONENT, MOLE PCT			
METHANE	68.5	72.1	77.0
ETHANE	5.8	6.5	6.5
PROPANE	3.5	3.8	1.5
N-BUTANE	1.0	1.1	0.1
ISOBUTANE	0.4	0.4	0.0
N-PENTANE	0.3	0.2	TRACE
ISOPENTANE	0.2	0.2	TRACE
CYCLOPENTANE	0.1	0.1	TRACE
HEXANES PLUS	0.2	0.2	TRACE
NITROGEN	19.5	15.1	14.3
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	TRACE	0.0	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	TRACE	TRACE	TRACE
HELIUM	0.48	0.41	0.30
HEATING VALUE*	971	1027	939
SPECIFIC GRAVITY	0.734	0.723	0.659

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 25 SAMPLE 15493	INDEX 26 SAMPLE 15486	INDEX 27 SAMPLE 15489
STATE	KANSAS	KANSAS	KANSAS
COUNTY	SCOTT	SEWARD	SEWARD
FIELD	HUGOTON & BRADSHAW	HUGOTON	HUGOTON
LOCATION	12 IN. HELIUM PLANT INLET	A-20 IN.	B-24 IN. DISCHARGE
OWNER	KANSAS-NEBRASKA NAT. GAS CO.	NORTHERN NATURAL GAS CO.	NORTHERN NATURAL GAS CO.
SAMPLED	11/15/78	11/14/78	11/14/78
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	360	360	360
PRESSURE,PSIG	365	500	800
FLOW,MCFD	200300	70000	140000
COMPONENT, MOLE PCT			
METHANE	67.0	73.7	73.7
ETHANE	5.8	5.4	6.6
PROPANE	3.6	3.0	4.2
N-BUTANE	1.0	0.9	1.2
ISOBUTANE	0.5	0.4	0.6
N-PENTANE	0.3	0.2	0.3
ISOPENTANE	0.1	0.2	0.3
CYCLOPENTANE	0.1	0.1	0.1
HEXANES PLUS	0.3	0.2	0.3
NITROGEN	20.6	15.4	12.2
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	TRACE	0.1	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.0	TRACE	TRACE
HELIUM	0.50	0.47	0.36
HEATING VALUE*	963	996	1080
SPECIFIC GRAVITY	0.741	0.707	0.725

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 28 SAMPLE 15494	INDEX 29 SAMPLE 15500	INDEX 30 SAMPLE 15499
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	BEAVER	BEAVER	BEAVER
FIELD	ANADARKO BASIN	ANADARKO BASIN	KERMIT
LOCATION	A-24 IN. DISCHARGE	B-26 IN. DISCHARGE	DE-30 IN. DISCHARGE
OWNER	NORTHERN NATURAL GAS CO.	NORTHERN NATURAL GAS CO.	NORTHERN NATURAL GAS CO.
SAMPLED	11/13/78	11/13/78	11/13/78
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	360	360	360
PRESSURE,PSIG	450	790	960
FLOW,MCFD	75000	237000	336000
COMPONENT, MOLE PCT			
METHANE	84.1	88.8	91.7
ETHANE	6.2	5.2	3.2
PROPANE	1.9	2.0	0.7
N-BUTANE	0.4	0.6	0.1
ISOBUTANE	0.1	0.2	TRACE
N-PENTANE	0.1	0.2	TRACE
ISOPENTANE	0.1	0.2	0.1
CYCLOPENTANE	TRACE	0.1	TRACE
HEXANES PLUS	0.1	0.2	TRACE
NITROGEN	6.4	2.0	3.1
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.1	0.1	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.2	0.5	0.8
HELIUM	0.24	0.13	0.10
HEATING VALUE*	1043	1103	1012
SPECIFIC GRAVITY	0.645	0.640	0.600

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 31 SAMPLE 15484	INDEX 32 SAMPLE 15426	INDEX 33 SAMPLE 15427
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	BEAVER	CIMARRON	CIMARRON
FIELD	PERMIAN BASIN	COMPOSITE	COMPOSITE
LOCATION	""C" 30 IN DISCHARGE	20 IN. DISCHARGE TO NORTH	20 IN. DISCHARGE TO SOUTH
OWNER	NORTHERN NATURAL GAS CO.	COLORADO INTERSTATE GAS CO.	COLORADO INTERSTATE GAS CO.
SAMPLED	11/13/78	10/17/78	10/17/78
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	360	435	435
PRESSURE,PSIG	830	700	400
FLOW,MCFD	508000	62000	18300
COMPONENT, MOLE PCT			
METHANE	88.7	77.2	75.1
ETHANE	4.7	6.9	6.4
PROPANE	1.1	2.4	2.4
N-BUTANE	0.2	0.3	0.4
ISOBUTANE	0.1	0.1	0.2
N-PENTANE	0.1	0.1	0.1
ISOPENTANE	TRACE	TRACE	0.1
CYCLOPENTANE	TRACE	TRACE	TRACE
HEXANES PLUS	0.1	0.1	0.1
NITROGEN	4.4	12.3	14.7
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.1	0.1	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.3	0.4	0.4
HELIUM	0.17	0.10	0.11
HEATING VALUE*	1031	991	972
SPECIFIC GRAVITY	0.617	0.677	0.690

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 34 SAMPLE 15428	INDEX 35 SAMPLE 15503	INDEX 36 SAMPLE 15260
STATE	OKLAHOMA	OKLAHOMA	OKLAHOMA
COUNTY	CIMARRON	CREEK	ROGERS
FIELD	KEYES GAS AREA	WESTERN OKLAHOMA	AMMONIA PLANT
LOCATION	16 IN. INLET	24 IN. DISCHARGE	NOT GIVEN
OWNER	COLORADO INTERSTATE GAS CO.	OKLAHOMA NATURAL GAS CO.	AGRICO CHEMICAL CO.
SAMPLED	10/17/78	11/20/78	04/13/78
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	435	353	355
PRESSURE,PSIG	488	540	NOT GIVEN
FLOW,MCFD	28000	250000	NOT GIVEN
COMPONENT, MOLE PCT			
METHANE	64.8	90.8	10.2
ETHANE	3.8	5.1	0.0
PROPANE	2.5	1.1	TRACE
N-BUTANE	0.9	0.2	0.0
ISOBUTANE	0.5	0.1	0.0
N-PENTANE	0.3	TRACE	0.0
ISOPENTANE	0.3	TRACE	0.0
CYCLOPENTANE	0.1	TRACE	0.0
HEXANES PLUS	0.2	0.1	0.0
NITROGEN	26.4	2.0	20.4
OXYGEN	0.0	0.0	TRACE
ARGON	0.1	TRACE	7.5
HYDROGEN	TRACE	0.1	61.6
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	TRACE	0.4	TRACE
HELIUM	0.17	0.05	0.24
HEATING VALUE*	876	1055	303
SPECIFIC GRAVITY	0.747	0.609	0.400

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H_2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 37 SAMPLE 15259	INDEX 38 SAMPLE 15421	INDEX 39 SAMPLE 15424
STATE	OKLAHOMA	TEXAS	TEXAS
COUNTY	ROGERS	HANSFORD	HANSFORD
FIELD	NOT GIVEN	CARTHAGE GAS AREA	COMPOSITE
LOCATION	OKLAHOMA NATURAL GAS CO.	24 IN. INLET	20 IN. DISCHARGE
OWNER	AGRICO CHEMICAL CO.	PHILLIPS PETROLEUM CO.	PHILLIPS PETROLEUM CO.
SAMPLED	04/13/78	10/17/78	10/17/78
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	355	360	360
PRESSURE,PSIG	NOT GIVEN	200	350
FLOW,MCFD	NOT GIVEN	16900	80000
COMPONENT, MOLE PCT			
METHANE	92.6	70.3	84.1
ETHANE	4.2	6.8	5.6
PROPANE	0.8	4.8	1.3
N-BUTANE	0.2	1.5	0.0
ISOBUTANE	0.1	0.7	0.0
N-PENTANE	0.0	0.4	0.0
ISOPENTANE	TRACE	0.4	0.0
CYCLOPENTANE	TRACE	0.1	0.0
HEXANES PLUS	TRACE	0.2	0.0
NITROGEN	1.5	14.0	8.6
OXYGEN	0.1	0.0	0.0
ARGON	TRACE	TRACE	0.1
HYDROGEN	0.0	0.1	TRACE
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.5	0.1	0.1
HELIUM	0.04	0.62	0.20
HEATING VALUE*	1044	1081	986
SPECIFIC GRAVITY	0.599	0.748	0.632

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 40 SAMPLE 15425	INDEX 41 SAMPLE 15423	INDEX 42 SAMPLE 15422
STATE	TEXAS	TEXAS	TEXAS
COUNTY	HANSFORD	HANSFORD	HANSFORD
FIELD	COMPOSITE	HUGOTON, TEXAS & OKLAHOMA	TEX. DEEP & OKLAHOMA HUGOTON
LOCATION	24 IN. DISCHARGE	20 IN. INLET	24 IN. INLET
OWNER	PHILLIPS PETROLEUM CO.	PHILLIPS PETROLEUM CO.	PHILLIPS PETROLEUM CO.
SAMPLED	10/17/78	10/17/78	10/17/78
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	360	360	360
PRESSURE,PSIG	200	350	200
FLOW,MCFD	155000	60000	42000
COMPONENT, MOLE PCT			
METHANE	84.7	77.6	82.6
ETHANE	4.8	7.1	8.1
PROPANE	1.3	4.8	4.7
N-BUTANE	0.0	1.2	1.2
ISOBUTANE	0.0	0.5	0.5
N-PENTANE	0.0	0.3	0.3
ISOPENTANE	0.0	0.3	0.3
CYCLOPENTANE	0.0	0.1	0.1
HEXANES PLUS	0.0	0.2	0.2
NITROGEN	9.0	7.5	1.6
OXYGEN	0.0	0.0	0.0
ARGON	0.1	TRACE	0.0
HYDROGEN	TRACE	0.1	TRACE
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.1	0.1	0.2
HELIUM	0.03	0.27	0.09
HEATING VALUE*	978	1135	1201
SPECIFIC GRAVITY	0.630	0.713	0.693

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 43 SAMPLE 15485	INDEX 44 SAMPLE 15495	INDEX 45 SAMPLE 15434
STATE	TEXAS	TEXAS	TEXAS
COUNTY	HUTCHINSON	HUTCHINSON	MOORE
FIELD	BUFFALO WALLOW ET AL	PANHANDLE W	COMPOSITE
LOCATION	30 IN. DISCHARGE	24 IN. DISCHARGE	24 IN. INLET
OWNER	NATURAL GAS PL CO. OF AM.	NATURAL GAS PL CO. OF AM.	PHILLIPS PETROLEUM CO.
SAMPLED	11/13/78	11/13/78	10/20/78
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	440	440	440
PRESSURE,PSIG	485	620	225
FLOW,MCFD	140000	120000	147000
COMPONENT, MOLE PCT			
METHANE	97.1	75.9	72.3
ETHANE	0.9	6.9	7.2
PROPANE	0.1	4.4	5.1
N-BUTANE	0.1	1.4	1.9
ISOBUTANE	0.0	0.8	0.8
N-PENTANE	TRACE	0.4	0.4
ISOPENTANE	0.0	0.7	0.5
CYCLOPENTANE	TRACE	0.3	0.1
HEXANES PLUS	0.1	0.5	0.3
NITROGEN	1.1	7.9	10.4
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.1	0.1	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.5	0.2	0.5
HELIUM	0.03	0.36	0.50
HEATING VALUE*	1011	1165	1143
SPECIFIC GRAVITY	0.573	0.737	0.755

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
** DUE TO THE ABSORPTION OF H2S DURING SAMPLING, THE REPORTED RESULTS MAY NOT BE RELIABLE

TABLE 2. - SAMPLES FROM PIPELINES IN THE UNITED STATES

	INDEX 46 SAMPLE 15435	INDEX 47 SAMPLE 15417	INDEX 48 SAMPLE 15502
STATE	TEXAS	TEXAS	TEXAS
COUNTY	MOORE	MOORE	MOORE
FIELD	COMPOSITE	PANHANDLE W	PANHANDLE W
LOCATION	COMPRESSOR PLANT DISCHARGE	22 IN. DISCHARGE	30 IN. DISCHARGE
OWNER	EL PASO NATURAL GAS CO.	COLORADO INTERSTATE GAS CO.	NATURAL GAS PL CO. OF AM.
SAMPLED	10/20/78	10/16/78	11/13/78
FORMATION	NOT GIVEN	NOT GIVEN	NOT GIVEN
GEOLOGIC PROVINCE CODE	440	440	440
PRESSURE,PSIG	552	400	650
FLOW,MCFD	429600	60000	150000
COMPONENT, MOLE PCT			
METHANE	88.0	72.5	79.5
ETHANE	4.7	7.6	6.2
PROPANE	1.2	4.8	2.9
N-BUTANE	0.2	1.5	0.7
ISOBUTANE	0.1	0.7	0.3
N-PENTANE	TRACE	0.3	0.2
ISOPENTANE	0.0	0.4	0.2
CYCLOPENTANE	TRACE	0.1	TRACE
HEXANES PLUS	0.1	0.3	0.1
NITROGEN	5.2	11.0	9.2
OXYGEN	0.0	0.0	0.0
ARGON	TRACE	TRACE	TRACE
HYDROGEN	0.1	0.1	0.1
HYDROGEN SULFIDE**	0.0	0.0	0.0
CARBON DIOXIDE	0.2	TRACE	0.2
HELIUM	0.18	0.65	0.48
HEATING VALUE*	1022	1119	1048
SPECIFIC GRAVITY	0.619	0.738	0.677

* CALCULATED GROSS BTU PER CU FT, DRY, AT 60 DEGREES FAHRENHEIT AND 30 INCHES OF MERCURY
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